



مجلة التربية الرياضية

مجلة علمية فصلية مُحكمة متخصصة

بعلوم الرياضة تصدر عن

كلية التربية البدنية وعلوم الرياضة
جامعة بغداد





جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بغداد
كلية التربية البدنية وعلوم الرياضة

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كلية التربية البدنية وعلوم الرياضة في جامعة بغداد

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تصميم الغلاف: د. ياسر وجيه قدوري

تعليمات النشر في مجلة التربية الرياضية

أولاً: تعليمات عامة:

- مجلة علمية رياضية فصلية غير ربحية، متخصصة بنشر البحوث العلمية الخاصة بعلوم الرياضة، لأغراض النشر العلمي، تصدرها كلية التربية البدنية وعلوم الرياضة / جامعة بغداد.
- تعتمد المجلة سياسة التحكيم السري والمزدوج والوصول الحر للبحوث دون قيد أو شرط.
- يتم استخدام الأسماء وعناوين البريد الإلكتروني والهواتف في قاعدة بيانات المجلة للأغراض العلمية فقط الخاصة بالمجلة ولن تكون متاحة للجميع أو تستعمل لغرض آخر.
- تعتد مجلة التربية الرياضية الرخصة (CC BY 4.0)  (a Creative Commons Attribution 4.0 International license) وهي بذلك تحفظ حقوق الملكية الفكرية للباحثين الناشرين فيها، وفي الوقت نفسه تتيح للآخرين بتحميل ومشاركة وإعادة استخدام وتوزيع البحث في نطاق واسع. للمزيد من المعلومات، انقر على الرابط أدناه: <https://creativecommons.org/licenses/by/4.0/>
- تتم إجراءات المراجعة الأولية للبحث المرسل من قبل هيئة التحرير وإجراء الاستلال الإلكتروني، ويتم اعلام الباحث بأي مشكلة خلال الأسبوع الاول من استلام البحث.
- يتم إحالة البحث للتحكيم العلمي من قبل هيئة التحرير لمحكمين أثنتين معتمدين من قبل المجلة وبشكل سري.
- تتم عملية التحكيم خلال مدة (3) اسابيع وفق تعليمات المجلة (ارشادات المحكمين).
- بالاعتماد على توصية المحكمين، يتم قبول البحث كما هو او قبوله بعد اجراء التعديلات او رفضه، ويتم اعلام الباحث بذلك.
- بعد الانتهاء من التحكيم، يتم طلب دفع رسوم النشر البالغة (120000) الف دينار عراقي. علماً إن المجلة غير ربحية والنفقات أعلاه لتغطية أجور التحكيم والنشر والترجمة فقط.
- يكون النشر للباحثين من خارج العراق مجاني وبشكل كامل ولحد نهاية سنة (2021).
- كل إجراءات تحكيم البحوث تكون إلكترونياً اعتماداً على نظام المجلات المفتوحة (OJS).

ثانياً: شروط كتابة البحث:

تتبع مجلة التربية الرياضية (JOPE) طريقة (IMRAD) في كتابة البحوث وهي ترمز الى الحروف الأولى لكلمات: المقدمة (Introduction). الطريقة والأدوات (Materials and Methods). النتائج (Results) و (And). المناقشة (Discussion). ورقة واجهة البحث: ويجب أن تتضمن الاتي:

- **عنوان البحث (Research Title):** يعد عنوان البحث الجزء المميز منه الذي يقرأه عدد كبير من الباحثين ويحتوي العنوان ايضا اسم الباحث (الباحثين) وعناوينهم (طرائق التواصل معهم).
- **شروط عنوان البحث:**

- ✓ يحوي على عدد قليل من الكلمات كلما امكن ذلك، و بما لا يزيد عن (12) كلمة.
- ✓ يكون واضح وسهل الفهم ولا يحتوي على المختصرات.
- ✓ يشرح محتويات البحث بدقة وبشكل محدد.
- ✓ ان لا يكون بصيغة استفهامية كما في المقالات الصحفية.
- ✓ يشير الى موضوع البحث وليس النتائج.

- **اسم المؤلف (المؤلفون) (Authors):** مؤلف البحث هو الشخص او الأشخاص الذين أسهموا بشكل فعلي في تخطيط وتنفيذ البحث. ويتم تثبيت أسماء المؤلفين بتسلسل منطقي نسبة الى أهمية مشاركتهم في البحث، اذ يُعد الاسم الأول بالبحث هو كبير معدي البحث وبكلام اخر المؤلف الأول (Senior Author) في حين يتم ترتيب باقي المؤلفين نسبة الى أهمية وقدر مشاركتهم في إتمام البحث. يكون طالب الدراسات العليا المؤلف الاول في اطروحته او رسالته يليه المشرف الرئيس بوصفه المؤلف الثاني وهكذا، علماً أن المجلة تعتمد تسلسل الباحثين حسب ما هو مثبت في البحث المرسل للمجلة. يجب ادراج هامش يشير الى المعلومات الخاصة عن المؤلفين كافة للاتصال بهم بهدف التعاون او الاستيضاح او اي شأن يخص البحث ومجال الاختصاص، ويجب ملاحظة ان يكتب الأسم الثلاثي واللقب للمؤلفين مع ذكر عنوان العمل و وسيلة الاتصال (البريد الالكتروني - رقم الهاتف) وباللغتين العربية والانكليزية.

- **مستخلص البحث (Abstract):** ينقل الملخص معلومات البحث القائم فعلا مع مراعاة عدم استعمال عبارات الوعود (سوف يقدم، سوف يعرض.... وغيرها)، ويكون ملخص البحث بمعدل (150-250) كلمة ويكتب في فقرة واحدة باللغتين الإنكليزية والعربية. يبدأ الملخص بترتيب متسلسل بعرض الاهداف ثم توضيح الإجراءات المستعملة واهم النتائج المتضمنة حقائق جديدة

تتعلق بتحقيق الأهداف، وأخيراً الاستنتاجات الرئيسية ومستوى دلالتها (Sig). وتكتب أفعال جمل عرض الأهداف والمقدمة ومناقشة النتائج والاستنتاجات في الزمن المضارع، في حين تكتب الإجراءات والأختبارات والنتائج في الزمن الماضي. يجب أن لا يحتوي ملخص البحث على الآتي:

- ✓ الاختصارات (الأحرف المختصرة) إلا إذا كانت معيارية أو معروفة مسبقاً مثل (Vo2Max).
- ✓ الإشارة إلى الجداول أو الأشكال في متن البحث والاستشهاد بالمصادر.
- ✓ أي معلومات أو استنتاج غير موجود في متن البحث والجمل العامة والجمل المطولة أو المعقدة أو الملتوية (المراوغة).
- ✓ تجنب ذكر البيانات الكمية بشكل مفصل وكذلك المعالجات الإحصائية والمصطلحات الطويلة جداً.
- ✓ ذكر المتوسط الحسابي والانحراف المعياري لأعمار وأوزان وأطوال عينة البحث. مثال: (متوسط الطول) متر ($\pm$ الانحراف المعياري).

- **الكلمات المفتاحية (Key Words):** يجب أن يتضمن البحث كلمات مفتاحية بعدد لا يتجاوز (6) كلمات، ويجب أن تكون محددة بالدراسة وغير الكلمات الموجودة في عنوان البحث، وعلى أن تكتب في نهاية ملخص البحث بفقرة منفصلة وباللغتين الإنكليزية والعربية.
- **المقدمة (Introduction):** تكون مقدمة البحث جيدة قصيرة نسبياً، تشرح أهمية الدراسة وتحديد أهدافها من خلال البحث في الأدبيات ذات العلاقة من مراجع ودراسات، ويكون ذلك عن طريق استعراض مختصر لهذه الدراسات والتي تكون ذات علاقة بمشكلة البحث والتي يجب أن لا تقل عن خمسة دراسات حديثة ومناسبة لتعزيز البحث، كما أن المقدمة تُعرف بالمصطلحات الخاصة أو المختصرات التي سيتضمنها متن البحث لاحقاً، ويفضل أن لا تتجاوز عدد الكلمات في مقدمة البحث عن (500) كلمة وأن لا تتضمن تكرار لعبارات أو مفاهيم ذكرت في أي موقع من الملخص، مع مراعاة تجنب العبارات الانشائية والجمل التي لا تضيف للقارئ معلومة مثل إعادة الحقائق والحالات البديهية.

- **الطريقة والأدوات (Materials and Methods):** أن الغرض من هذا القسم هو لعرض ما تم عمله، وكيف تم، وأين تم، وذلك بطريقة مباشرة وبسيطة فضلاً عن التعريف بكيفية جمع البيانات وعرضها وتحليلها. إذ يجب أن يوفر هذا القسم من البحث كل المعلومات الضرورية اللازمة للسماح للمؤلفين الآخرين للحكم على الدراسة والإفادة منها، ويجب مراعاة ترتيب

- الاجراءات الميدانية زمنياً مع توفير كافة المعلومات الضرورية فقط، وعلى وفق ذلك يتطلب ان يتضمن هذا القسم من البحث على الآتي مع أهمية تسلل الفقرات:
- ✓ منهج البحث وتصميمه المستعمل.
 - ✓ الوصف الدقيق لعينة البحث من حيث (الجنس والعمر والوزن.... وغيرها).
 - ✓ تصميم التجربة مع عدد مرات اجراء الاختبار او القياس وإيجاز الإجراءات المستعملة لاختذ العينات (إجراءات الاختبار).
 - ✓ ذكر الأجهزة والادوات المستعملة مع مواصفاتها الفنية الدقيقة وعددها ومصدرها وطريقة العمل بها (الضرورية منها فقط غير شائعة الاستعمال). ويجب استعمال الأسماء العلمية للأجهزة بدلاً عن اسمائها التجارية مع ذكر أسماء الشركات المصنعة للجهاز واية معلومات تفيد القارئ.
 - ✓ وصف التعديلات اذا ما تم اجراءها على القياسات الروتينية (الاختبارات)، اما إذا ما تم استعمال اجراء جديد (اختبار جديد) فيجب ذكره وشرحه بالتفصيل.
 - ✓ توضيح طريقة اجراءات البحث من تجربة واختبارات ورقية، وعملية، وشفوية او على جهاز الحاسوب.
 - ✓ الطريقة الإحصائية (او/و) الرياضية المستعملة لتحليل وتلخيص البيانات.
 - ✓ يحق للمجلة ان تطلب من المؤلفين تفاصيل او معلومات إضافية عن أي جزء من أجزاء البحث. وبشكل عام يجب ان يضع المؤلفين بعين الاعتبار الأمور الآتية عند كتابته لإجراءات البحث:
 - ✓ لايجوز استعمال المختصرات (بأي لغة كانت) قبل تعريفها في ملخص البحث او مقدمته.
 - ✓ تحديد نظام وحدات القياس الدولية المستخدم في البحث، مثل (المتر، كيلوغرام، الثانية ... الخ)
 - ✓ توضيح جميع المواد المستعملة في الدراسة بحيث يمكن للقارئ استعمالها في بحوث مشابهة أخرى.
 - ✓ وصف اهداف واجراءات القياس لكل اختبار (اختبار قبلي - اختبار بعدي - اختبار احتفاظ ... وهكذا) .
 - ✓ وصف كل التقنيات والاختبارات المستعملة بذكر اسمها فقط اذا كانت معروفة وقياسية او ذكر التفاصيل في حالة كونها جديدة او تم اجراء تعديل عليها.
 - ✓ لا يجوز اضافة معلومات لا تمت بصلة بالنتائج، والتي يمكن ان تربك القارئ.
 - ✓ استخدام الافعال بصيغة الماضي في عرض اجراءات البحث.

• **النتائج (Results):** يُقدم هذا القسم من البحث المعلومات الجديدة التي توصل لها الباحث، لذا يعد على أنه أساس (مركز) البحث. ويلاحظ أن مقدمة البحث والإجراءات صُممت للإجابة عن التساؤلات؛ لماذا وكيف وصل الباحث (الباحثين) لهذه النتائج والتي سيتم تفسيرها في قسم المناقشة، لذا فإن قيمة البحث تكون بما يتضمنه من نتائج، ويجب أن يتم عرضها بطريقة واضحة جداً ومباشرة وباستعمال العدد الضروري من الكلمات دون اسهاب أو اختصار، وعادة ما يكون عرض النتائج أسهل فهماً إذا ما تم ترتيب العرض على وفق تسلسل أهداف البحث التي تم ذكرها في مقدمة البحث.

إرشادات حول عرض نتائج البحث:

- ✓ أعرض نتائج البحث بشكل بسيط وواضح في جداول أو أشكال وذلك لتسهيل فهمها ومقارنتها. ملاحظة أن الجداول تعرض أرقاماً دقيقة في حين أن الأشكال تظهر الاتجاهات ذات الخصائص ولا يجوز عرض أرقام الجداول نفسها في الأشكال.
- ✓ لا يجوز إعادة النتائج كتابةً بعد عرضها في الجداول أو الأشكال التوضيحية، ويمكن فقط الإشارة إلى أهم ما مؤشر في الجداول أو الأشكال (أي عدم استعمال العرض الكتابي للجداول).
- ✓ وثق واعرض فقط البيانات الضرورية بدلاً من الاسهاب والتكرار في عرض البيانات ولا تعرض بيانات كثيرة واختصرها بالتحليل الاحصائي ولخصها لعرضها في جداول أو أشكال وذلك لتسهيل فهمها ومقارنتها.
- ✓ ضمن نتائج البحث بالنتائج السلبية (ما لم يتحقق) إن كان ذلك مفيداً لتفسير النتائج.
- ✓ عند كتابة النتائج يتم الإشارة إلى الجداول أو الأشكال بأرقامها (الجدول 1) (الشكل 1).

المناقشة Discussion: في هذا القسم من البحث يفسر الباحث (الباحثون) مضمون النتائج ودلالاتها والآثار المترتبة عليها. وتُبين المناقشة أهمية قيمة العمل المنجز كما أنها تربط كل أجزاء البحث معاً. إن مهارة الباحث (الباحثين) في تفسير النتائج الجديدة، على وفق الحقائق المعروفة باستخدام نتائج البحث هي دليل على التغيرات المبتكرة (الابداعية) للسلوك الملاحظ، ويجب أن تدفع حدود معرفة القارئ (توسع مداركه) وتثير حماسه. وعلى الباحث أن يلتزم بالاتي في مناقشته للنتائج:

- ✓ ناقش على ضوء معنوية النتائج.
- ✓ لا تكرر ما تم ذكره في الدراسات السابقة.

✓ تتضمن مناقشة النتائج تفسير اتفاقها او عدمه مع المعلومة او المعرفة في الدراسات المنشورة سابقاً.

✓ تدعيم النتائج التي توصلت اليها بأساس نظري علمي (ما هي الأسباب العلمية للنتائج المتحققة).

✓ اقترح بحوث مستقبلية مخطط لها اوبحوث بحاجة الى متابعة (دراسة).

✓ لا يجوز اضافة معلومات لم يتناولها البحث، وان يتم التعامل مع النتائج الموثقة في الدراسة الحالية فقط.

✓ تجنب التعميم والتخمين للنتائج والتي لم تؤكدھا الدراسة.

✓ تكتب المناقشة بصيغة المضارع والماضي، اذ تكتب المعارف المتوافرة من الادبيات والأبحاث بصيغة المضارع، في حين تكتب مناقشة نتائج البحث الحالي بصيغة الماضي.

الاستنتاجات (Conclusions): الاستنتاجات ليست إعادة صياغة لنتائج البحث، انما هي مستنبطة منها. فالاستنتاجات تشير الى الخطوط العريضة للدراسات المستقبلية استناداً على نتائج الدراسة الحالية. ويمكن تخصيص فقرة مستقلة للاستنتاجات.

الشكر والتقدير (Acknowledgments): تسمح المجلة بتضمين كلمات الشكر والتقدير في نهاية البحث ويخصص لشكر المؤسسات والافراد الذين قاموا بمساعدة حقيقية للباحث لاجراء بحثه اذ يقدم الشكر للشركة، او المؤسسة التي قدمت الأموال لدعم البحث، او المختبرات التي زودت الباحث بالادوات والأجهزة، او الى الأشخاص الذين قدموا للباحث النصيحة والمساعدة في جميع البيانات، او التحليل او أي أمر اخر مهم. كما ان هذا القسم يعد مكاناً لذكر اصل البحث وبكلام اخر اذ كان البحث مستقلاً من رسالة ماجستير او أطروحة دكتوراه.

المصادر (References): تتضمن قائمة المصادر كل الاستشهادات المعتمدة في متن البحث فقط وبطريقة (APA) الإصدار السادس حصراً وفق نظام (Microsoft Word 2010) صعوداً أو برنامج (Mendeley) أو (EndNote). ان الاستشهادات النصية في متن البحث يجب ان تتطابق تماماً مع قائمة المصادر.

الملاحق (Appendix): يمكن ادراج أي معلومات تخص البحث المهمة منها حصراً ضمن الملاحق، إذ تحتوي الملاحق على تفاصيل المنهاج التدريبي او البيانات او الجداول الكبيرة (الجداول المعيارية) أو ادوات البحث مثل الاستبيانات وبرامج الحاسوب المستعملة او الأجهزة المصنعة والتي يجب عرضها وشرحها لاهميتها والتي لا يمكن ادراجها ضمن متن البحث بسبب كبر حجمها.

جدول توضيحي يلخص طريقة امراد (IMRAD)

ت	القسم	الغرض او الهدف
1	العنوان	عن ماذا البحث.
2	المؤلفون (الباحثون)	أسماء وانتماءات المؤلفين.
3	الكلمات المفتاحية	الكلمات غير الموجودة في العنوان والتي توصف البحث.
4	الملخص	شرح قصير عن ذلك البحث.
5	المقدمة	لماذا هذا البحث؟ والمشكلة وما هو غير المعلوم وأهداف البحث؟
6	الأدوات والإجراءات	كيف تم اجراء البحث؟
7	النتائج	ماذا وجدت؟
8	المناقشة	ماذا يعني ذلك؟ وما التالي؟ وتفسير النتائج والتوجه المستقبلي.
9	الاستنتاجات	الاثار المحتمليه (الممكنة)
10	الشكر والتقدير	لمن ساعدوك وكيف؟ وما هو مصدر التمويل؟
11	المصادر	تفاصيل عن استشهادات البحث.
12	الملاحق	المواد التكميلية.

ثالثاً: شروط استلام البحث لغرض النشر في مجلة التربية الرياضية:

- ✓ أن لا تزيد عدد كلمات البحث عن (2500-3000) كلمة.
- ✓ أن يطبع البحث بنظام (Microsoft Word 2010) صعوداً بحجم خط (12) لمتن البحث و (14) غامق للعناوين الرئيسية وبنوع (Simplified Arabic) للغة العربية و (Times New Roman) للغة الإنكليزية بأبعاد الصفحة القياسية (عمودي - 3.17×2.54 سم). وبمسافة منفردة بين الاسطر و (1) بين الفقرات.
- ✓ أن يثبت اسم الباحثين الكامل والصحيح باللغتين العربية والإنكليزي اسفل عنوان البحث، في حين تثبت معلوماتهم (الشهادة، والقابهم العلمية ومكان عملهم ووسيلة الاتصال بهم البريد الالكتروني ورقم الهاتف مع المفتاح الدولي) في هامش الصفحة الاولى.
- ✓ ترقيم صفحات البحث إلكترونياً أسفل ووسط الصفحة.
- ✓ تكون أبعاد الصور او الاشكال متناسقة وبإسعمال الماسح الضوئي حصراً وبدقة عالية.

- ✓ يكتب رقم الجدول وعنوانه بشكل مختصر ووافي اعلى الجدول في حين يكتب رقم وعنوان الصورة او الشكل في الأسفل وبشكل ومختصر ووافي.
- ✓ ينشر البحث باللغة الإنكليزية بعد ان يتم ترجمته من قبل المجلة يمكن ارسال البحوث او يمكن ارساله باللغة الإنكليزية.
- ✓ تطبع الأرقام بالصيغة العربية حصراً (0 1 2 3 4)، وعند استعمال الاقواس لا يتم ترك مسافة بين الاقواس مثل: (2540)، وعدم ترك مسافة قبل علامات الترقيم مثل الفارزة، او النقطتين، او النقطة. مثال: التدريب الرياضي، التعلم الحركي، علم النفس الرياضي.
- ✓ لا يجوز استعمال برامج الترجمة الفورية او مواقع الانترنت للترجمة للغة الانكليزية مثل (google translate) وغيرها.
- ✓ استعمال المصطلحات العلمية المعروفة والمتداولة، وعلى الباحثين المقدمين لبحثهم باللغة العربية ادراج المصطلحات العلمية باللغة الإنكليزية في متن البحث.
- ✓ الاستشهاد بالمصادر يكون وفق أسلوب (APA) الإصدار السادس حصراً وفق نظام (Microsoft Word 2010) صعوداً أو برنامج (Mendeley) أو (EndNote).
- ✓ يجب ان تتطابق الاستشهادات النصية في متن البحث تماماً مع قائمة المصادر.
- ✓ لا يقبل الاستشهاد من المواقع الالكترونية العامة والضعيفة.
- ✓ يقبل الاستشهاد من المواقع العلمية الرصينة الرصينة بالاعتماد على البحوث المنشورة المجالات المحكمة والكتب العلمية والرسائل والاطاريح الجامعية المحلية او الدولية.
- ✓ يجب أن لا تقل الاستشهادات بالمصادر العلمية عن (25) مصدر رصين وبواقع (50%) من البحوث العلمية كحد أدنى، و (50%) كحد أعلى من الكتب العلمية.
- ✓ يجب ان تكون المصادر حديثة (اخر خمس سنوات)، مع وجود بعض الاستثناءات الضرورية.

ثبت المحتويات

الصفحة	عنوان البحث	اسم المؤلف (المؤلفين)	ت
880-891	Rapid Response Training (Q R T) in developing some physical abilities and skill performance among junior football players	Nahlah Obed, Shahad Jasim	1
892-910	The morale of disabled players and its relationship with some variables	Natiq Barrak	2
911-922	Decision-making by the administrative bodies of sports clubs participating in the Iraqi Premier League for football for the 2022-2023 season.	ahmed hashim, Tariq Yousif	3
923-940	Small-sided game activities impact the specific motor skills and skill-related competencies of football players between the ages of 12 and 14 years	Omar Mohammed, Ahmed Attia	4
941-960	The use of positive rest in maintaining the level of creatine phosphokinases enzyme and the peak and average non-oxygen capacity of Iraqi Premier League football players during the transitional period	ammar Naser, Mohameed Khalaf, Naji Ali	5
961-979	The Effect of Competitive Exercises Using Physical Performance Tracking Technology (GPS Playertek Plus and Polar H9) on Developing Speed in Iraqi Premier League Football Players	Haitham Kadhim, Mohammed Hussain, Maab Fathi	6
980-999	The effect of a psychological counselling approach on cognitive load and mental fatigue among young 110-meter hurdles athletes	Liqa Obaid, Hind Salem	7
1000-1032	Intensifying the exercise using a device to control the angles of muscle work in developing the chest muscles and maximum strength for bodybuilding players	Ameer Abdulrahman, Ammar Rashid, Hussein Khamis	8
1033-104	The effect of axial stability exercises with dynamic contraction on the electrical activity of the rectus femoris muscles and the accuracy of shooting from a fixed position with a basketball	Zainab Khalaf	9
1049-1065	The reality of the organizational environment for educational supervisors from the point of view of physical education teachers in Baghdad	Nadia Mohammed, suher mutib	10
1066-1084	The Effect of a Psychological Counseling Program to reduce irrational ideas and the causal attribution of the coaches of the gymnasium sports care center	Baydaa Abd-Ulwahid	11
1085-1102	The impact of special exercises using the (Wheatley's) strategy on learning to perform the underhand serve and reception skills in volleyball for students	Ithra Abbas, Maher Shalash	12
1103-1115	A study to analyze the performance level of the high spike and serve skills of professional players in the Iraqi Volleyball Premier League for the 2022-2023 season	tabark almaliki, Naeema Khalaf	13

1116-1132	Obstacles to achieving quality field application performance from the point of view of fourth-stage female students at the College of Physical Education and Sports Sciences, University of Baghdad	Yasir Khader, Mauth Fadhel, Abdullah Hamdan	14
1133-1147	Total Quality Management Applications in the Process of Qualifying and Training Physical Education Teachers	Qutaiba Alwan	15
1148-1162	The effect of rehabilitation exercises with body weight and rubber resistance on the range of motion and the strength of the sprained ankle muscles in female rugby players	Baydaa Jawad, Ali Yaseen, Shaima Ali, Ahmed Abdulhussein	16
1163-1170	The effect of using special intense exercise accompanied by intermittent electrical stimulation to get rid of lower neck pain among professors of the College of Science - University of Baghdad for ages (40-60) years	karam salam, Farah Abdulameer, Ghadah Shihab, Mohammed Kadhim	17
1171-1185	The Effect of the (Team - Pair - Solo) Strategy in Learning the Accuracy of the Spiking Skill in Volleyball	Donia Ali, Najla Al-Zuhairi	18
1186-1205	The effectiveness of using interactive harmonic exercises in improving the level of some physical and motor abilities and intelligence for students aged (9-10) years	Thaer Salman, Ruaa Taha	19
1206-1216	The relationship of motor response-ability to the level of skill performance for the female futsal players of Al-Zawraa Sports club	Samer ALATTAR, Mohammed al-Maliki	20
1217-1229	A comparative study in time management between track and field sports players and volleyball players	Maysaa Matrood	21
1230-1243	The effect of weight training using Muscle and motion application in some of strength types for boxers	Abduljaleel Naser, Dham Mohammad	22
1244-1264	Building and standardizing skill tests based on visual scanning for players in the Iraqi Star League clubs	Saif Khaled Ahmed, Faleh Finjan	23
1265-1287	Designing and standardizing a test to measure the accuracy of long-range shooting from knee level for handball players aged (15-17) years	Moushriq fathi	24

Rapid response training (Q.R.T) in some physical abilities and technique evolution for juniors' soccer players

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Abstract

It demands different response situations, such as speed in attack or speed in defense for all team members, speed in decision-making and control of the ball, and creating better opportunities to achieve a state of superiority and victory over the V.S team. The importance of research appears in providing quick response training (Q R T) in order to contribute to strengthening some Physical abilities such as strength, speed, agility, passing and scoring skills. As for the problem of the research, it is observed that some players cannot make a quick decision, so they look at the goal and take time to make the decision and respond, which may cause the attack to fail and lose possession due to the loss of the element of surprise and confusion of the defenders. The research aimed to identify the effect of quick response training (Q R T) on some physical abilities and skill performance among junior soccer players and specialized school players aged (14-16) years, and to use quick response training (Q R T) training on the experimental group. It was concluded that adopting training Quick Response (Q R T) works to develop some of the physical abilities of emerging soccer players, and it was recommended that training programs be designed to develop the speed of motor response and accuracy of scoring and passing.

Keywords: Sports performance, self-control, motor skills, sports achievement, sports psychology.

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Introduction

Soccer is one of the most famous and widespread sports in the world. It is a fast, dynamic game that is attractive and therefore extremely popular among young people. Developing the physical abilities and skill performance of emerging soccer players is considered crucial to ensuring their athletic growth and achieving their full potential in this sport, which is full of challenges. (Fadel & Kadem, 2021) Soccer is characterized by many and varied situations and situations, as it requires different situations of responses, such as speed in attack or speed in defense, for all members of the team. And speed in making decisions, controlling the ball, and creating better opportunities to achieve a state of superiority and victory over the V.S team. This, of course, only happens if the team meets those physical and movement requirements and the performance ends, or those attacks end with scoring goals to achieve victory, and this in turn is done with a kinetic response in the shortest possible time. (Kadhim & Mousa, 2024) That is, when performance is combined with speed of response for all team members to reach the desired goal, the team that is characterized by high speed of performance has greater chances of winning, and the best players in the world because of their great skill speed, especially in the field of passing and scoring, are able with that speed to control the ball. And to implement skills quickly, which is the most challenging form in soccer. (Kadhim & Majid, 2023) Therefore, the ability to move quickly and respond quickly to changes in the path of the ball or the movements of V.S players is essential in soccer. Hence the importance of research into providing quick response training (QR T) in order to contribute to enhancing some physical abilities such as strength, speed, agility, passing and scoring skills. (Nashwan & Allawi, 2021) Quick response training (Q R T) can help improve some of these abilities and thus respond effectively to changing situations by stimulating quick reactions and developing the ability to make quick decisions in certain situations. It can include a response to unexpected variables. The speed of playing the ball requires quick processing of decisions, and as such, the benefit in developing mental skills has become clear through these exercises.

Problem of the study

The advanced skill level of the team's players will help to implement the game plans as best as possible and achieve their goals with the least effort and the shortest period of time. In the game of soccer, the opposing player is close to the player in possession of the ball and tries to cut it off. Here, the player must be characterized by quick processing of decisions and Rapid performance, and through the work of the field researcher and his observation of the junior teams, (Mousa & Kadhim, 2023) he often noticed that some players, when the player reaches a position that allows him to score, cannot make a decision quickly, so he looks at the goal and takes time to make the decision and respond, which may cause the attack to fail and lose possession. Due to the loss of the element of surprise and confusion of the defenders. All of this created for the researcher a problem that he tried to

study and find a solution to by using quick response training (Q R T) for emerging players, such as exercises to respond quickly to visual and auditory indicators of the presence of competitors, (Abdulhussein et al., 2024) or quick response training, exercises that challenge coordination between the hands and eyes and tracking vision to improve response time. It is an essential aspect of rapid response training. Athletes are exposed to different scenarios that force them to make decisions quickly and accurately. (Abdul Sahib et al., 2022) These exercises aim to train the brain to process information quickly and thus to develop some of the physical abilities and skill performance of junior soccer players.(Khlaif & Shnawa, 2022)

Aims of the study

- 1 - knowing the quick response exercises (Q R T) and some of the physical abilities and skill performance of junior soccer players.
- 2- Identify the effect of quick response training (Q R T) on some physical abilities and skill performance among junior soccer players.

Hypotheses of the study

- 1 - There are statistically significant differences between the pre- and post-tests in some physical abilities and skill performance among junior soccer players for the control and experimental groups, and in favor of the post-test.
- 2 - There are statistically significant differences in the post-tests in some physical abilities and skill performance of junior soccer players between the control and experimental groups and in favor of one of the two groups.

Fields of the study

Society: the (14 – 16 years) Iraqi specialized schools

Place : fields in ministry of youth & sports (Iraq – Baghdad)

Duration : (2 / 8 / 2023 - 16 / 10 / 2023)

Study procedures

researcher used the experimental method. The method is “the method followed by the researcher in his study of the problem to discover the truth”, which is an important method for solving a specific problem and reaching real results about performance from a scientific and practical standpoint.

Sample of the study

The research society was chosen intentionally, and they are young players aged (14-16) years, players from specialized schools, and a sample of (18) players was chosen. The sample members were divided into two groups, control and experimental, randomly by drawing lots, with (9) players for each group.

Information & data collecting

- Arabic and foreign sources.
- Questionnaire forms
- Experts and specialists
- Tests and measurement

Devices and tools used

- Electronic stopwatch (2)
- Random shot device (3).
- One (1) laptop
- soccer goals (2)
- Balls (12)
- Signs
- Whistle
- Measuring tape

Define tests:

1- Explosive strength test.

The aim of the test: to measure the explosive strength of the leg muscles.

Tools: chalk, measuring tape, board.

Description of the performance: A board is placed next to the tester and tester extends his arm to mark the point he reaches with a piece of chalk. When the signal is given, the tester

assumes a jumping position to reach the highest possible point and marks on board the maximum height the tester will reach.

Scoring: The distance between the first and second signals is measured, the number is recorded, two attempts are given to the player, and the best is counted.

2- Motor response speed test.

aim of the test: to measure the speed of the motor response of the legs

Tools used: stopwatch / tape / measuring tape

Test specifications: Two side lines are drawn at a distance of 6.4 m from the center line, which is 1m.long. The goalkeeper stands on the center line, the coach stands in front of him, raises the hand holding the stopwatch, and when pointing to one of the two directions, he runs in the direction determined by the coach, and same thing for both directions.

Scoring: The time taken is calculated from the signal until the goalkeeper crosses the side line completely. Ten attempts are given to each goalkeeper in both directions. A rest of 20 seconds is given between each attempt and the best attempt is recorded.

3- Agility test

Test of running between the blocks for a distance of 7 m:

The purpose of the test: to measure agility.

Tools: stop watch, 6 signs, measuring tape.

Description of the performance: The tester stands on the start line and when the signal is given, the tester begins to run quickly between the signs back and forth.

Recording: The time is recorded in seconds and to the nearest 1/100 microsecond that the laboratory took back and forth.

4- soccer passing test

Test name: “Bounce handling test on the wall for (20) seconds.”

Purpose of the test: to measure handling accuracy.

Used equipments :

- A smooth wall marked with an area of 1.30 meters x 2.20 metres, and a line is drawn in front of the wall at a distance of (5) metres.

- Legal soccer balls (3).

- Electronic stopwatch.

Description of the performance: After hearing the start signal, the player standing behind the starter hits the ball against the wall and hits it again after it bounces off the wall, and so on until the end of the test period (20) seconds.

Test instructions:

- The ball bouncing off the wall is only hit behind the starting line.
- If the ball goes out of the player's control, he takes one of the other two balls without stopping.
- The ball can be hit with any foot and any part of it.

Score calculation: The number of correct ball hits against the wall is recorded within (20) seconds.

5- Football scoring test

Test name: Scoring after the ball bounces off a Swedish platform from a distance of (10) m

The aim of the test: to measure scoring accuracy.

Tools used: a soccer ball, a Swedish level, 3 meters long and 50 cm high, a goal divided into 5 sections using ropes, a whistle, and a registration form.

Method of performance: The tester stands with the ball at the center line, then passes the ball to the bench, which is on the side, allowing the ball to be returned and prepared for the tester at a person 10 meters away from the goal.(Ali et al., 2020) Then he scores a goal divided into steps, as in (3-2-1-). 2-3) Near column 3, on the sides (2) degrees and in the middle (1) degrees, outside the target zero

Scoring: The tester is given (3) attempts, and the score is calculated according to the location of the ball's entry

Pretests:

The researcher conducted pre-tests on players from specialized football schools on August 2, 2023. At 6 pm, he conducted the skill tests first, then the physical tests

skewness	l.deviation	dian	an	n.unit	parameter
.09	2.14	0.5	38	cm.	Explosive power
.07	.06	16	5	Sec.	Motor response
.45	.56	.27	37	Sec.	Agility
.06	.84	.4	4	mark	ss to drawing goal on wall
.19	.76	6	3	mark	Shooting speed

Quick response exercises (Q R T) for junior football players:

- Implementing special exercises for a period of 8 weeks from 8/4/2023 until 10/2/2023, at a rate of two units per week, and the number of units reached 16 units.

The program was implemented within the skills preparation part of the main section, while the other stages and sections of the unit are trained with the control group.

- It is a specialized training method designed to improve an athlete's ability to respond quickly and effectively in dynamic and high-pressure conditions.

- Focuses on developing quick decision-making, under pressure from the opponent, and using the ball
- Increasing nervous responses and improving the physical and mental characteristics necessary for quick and accurate response.
- Rapid response training includes exercises and exercises that enhance speed and agility

These include jogging exercises, lateral movements, and rapid changes in direction. Jogging exercises, lateral movements, and rapid changes in direction using the Random Shot device.

- Respond quickly to visual indicators. Rapid response training exercises include exercises that challenge hand-eye coordination and vision tracking to improve response time
- Rapid decision-making exercises from different situations that force them to make decisions quickly and accurately. Rapid response exercises often simulate high-pressure situations.
- Maintaining balance while changing direction quickly Rapid response drills often mimic high-stress situations
- The researcher adopted high intensity
- Increase repetition gradually
- Performing handling and scoring exercises with stimuli and reaction devices - Performing with audio-visual stimuli devices using the Random Shot device)

Posttests:

The tests were applied on 10/4/2023 at six o'clock by the research sample, the control and experimental groups, in the place and with the same tools and conditions that were previously applied in the pre-test as much as possible.

Statistical methods:

The researcher relied on the statistical package (SPSS) to find statistics for the research variables.

- 1- Arithmetic mean.
- 2- The mediator.
- 3- Standard deviation.
- 4-Pearson correlation coefficient

4- T-test for correlated samples.

5- T-test for uncorrelated samples

Discussion of the results of the differences in physical abilities and skills between the control and experimental groups for the research variables:

The results of the differences between the experimental and control groups showed that the experimental group was superior in some of the physical abilities and skills of budding soccer players. (Abdul-Gani et al., 2024) The researcher believes that quick response training (QRT) plays a vital role in developing the physical abilities and skill performance of budding soccer players. (N.K. & A.S.A., 2020) These exercises should be an essential part of sports training programs to stimulate the comprehensive growth and development of athletes through performing and repeating special exercises in a manner that amounts to being above or close to the match or simulating the match, taking into account the change in the exercise and its multiplicity, as well as the player's drive towards skill performance and experience. (Al-fatlawi et al., 2023) What is new in these exercises makes the player perform the repetitions with confidence and a desire to perform better, and this is confirmed by both (- Luiselli K. James and Reed) "The high execution of the skill is achieved under conditions similar to the playing conditions, and the change in the shapes and types of stimuli in a complex way leads to Developing the player's skill in terms of speed and accuracy, (Abdulhussein et al., 2024) and (Ali Al-Attar & Jari, 2023) as deliberate practice for certain periods is to build fluency (speed and accuracy) and therefore this indicates that the direction of the indicator is towards the experimental group at the expense of the control group. And providing the player with the opportunity to perform quick response exercises (Q R T) during Repetitions allow him to correct paths and thus increase accuracy. Correct and continuous implementation of these exercises reduces response time, which adapts the player for this purpose. The physical abilities and skills of emerging football players improve, and the results are logical.(Easa et al., 2022)

Conclusions

- 1- Adopting quick response exercises (Q R T) works to develop some of the physical abilities of emerging football players
- 2- Adopting quick response exercises (Q R T) works to develop the explosive power of emerging football players
- 3- Adopting quick response exercises (Q R T) works to develop the response speed of emerging football players
- 4- Adopting quick response exercises (Q R T) works to develop motor agility among emerging football players
- 5- Adopting quick response exercises (Q R T) works to develop the handling skills of emerging football players
- 6- Adopting quick response exercises (Q R T) works to develop the scoring skill of emerging football players

Recommendations

1. Design training programs to develop motor response speed and accuracy of scoring and handling
2. Paying attention to training the physical elements so that performance ranges from movement to skill
3. Generalizing the results to junior football coaches
4. Conduct similar studies for emerging football players

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The morale of disabled players and its relationship with some variables

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Abstract:

This research aimed at detecting to morale level of disabled players as well as knowing the differences in degree of morale and influence of experience, educational achievement and age on it. The researcher used the descriptive method according to the case study method in addition to the morale scale prepared by the researcher after ensuring validity, reliability, and objectivity of this scale. The subjects were (25) players from Anbar Governorate teams who participated in tournaments for 2022-2023 season. The researcher concluded that level morale of the players was low, in addition that there was no effect of educational attainment, experience, and age on the level of morale. Finally, the researcher stressed the necessity to pay attention the humanitarian, social, as well as technical and administrative aspects of clubs and federations in addition to spreading familiarity, love and affection among players and encouraging team play.

Keywords: morale, players with disabilities.

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Introduction

In the past, the disabled suffered from isolation and introversion, which negatively affected their behavior. However, some of them were able to eliminate this negative feeling and break down the walls of isolation and were able to take a leading position in human history and sports history. The evidence for this is the achievements of the disabled sports champions who gained the admiration and appreciation of everyone.

The achievements of disabled players require all researchers and specialists in physical education and sports sciences to continue to provide scientific research to contribute to raising the level of these players as well as developing their physical, skill and psychological abilities. Most studies confirm that morale is one of the psychological factors that contribute to a team's success in achieving victory. The higher the morale of the players, the greater their ability to achieve victory. However, if morale decreases, this leads to a decrease in the physical and skill level of the players during competitions, which causes their efforts to be wasted and their failure to achieve victory.

Morale has many concepts according to the opinions of researchers and specialists. Some researchers define it as the quality and level of the psychological state that a person feels in different situations (Al-Tamimi, 2002, p.258), While another researcher defines it as the prevailing spirit among employees, which is characterized by confidence in the institution in which they work as well as in the work group and in appreciation of the role of each person in this institution(Al-Dulaimi, 1988, p.133).

There are many factors that affect people's morale and lead to its rise or fall. These factors depend on the extent to which these people are able to satisfy their psychological needs such as psychological security, belonging to the group, appreciation and encouragement, success and growth, and achieving social status (Al-Shaibani, 1992, p. 152).

From the above, the researcher concludes that morale is an integrated image of the type of human relationship that connects the player with his teammates. It is also the product of the feelings, emotions and tendencies that control the players' actions and help them to bear the pressure of matches and resist the challenges they face during competitions with all courage and strength.

The factors that affect morale are many and difficult to identify, but the researcher chose a group of these factors that were mentioned in various studies and formed the areas of the questionnaire that the researcher used, as follows:

-The field of social and human relations

It means the methods of dealing adopted by the management of the union or club, through which it works to establish good relations with the players, as well as to seek to satisfy and develop the needs of these players, as well as to identify the problems of the players and encourage them to communicate with them within the framework of mutual respect and good treatment.

-The field of status and appreciation

It means that players feel pride and self-esteem in front of the management of the federation or club they play for, through the respect of this federation or club for their opinions, ideas and suggestions.

-Self-confidence area

It means the players' ability to exert all their efforts to achieve the team's goals of winning and obtaining championships, with these players believing in their capabilities and ability to achieve that.

-The field of loyalty and belonging to the team

It means the players' feeling of belonging and loyalty to the team they play for.

The importance of this research lies in revealing level morale among disabled players who represent teams Anbar Governorate and studying its factors and dimensions to provide ideal atmosphere that helps raise the level morale of these players and then raise level these teams and achieve accomplishments.

The research problem was represented in the problems and obstacles suffered by the teams of Anbar Governorate for the disabled, which the researcher observed in the field, as the variable of morale is a psychological variable subject to direct observation and which can be observed and measured through its effects (Al-Harbi, 2005), and these problems and obstacles negatively affected the behavior of many players who were complaining during training sessions or competitions. Therefore, the

researcher studied this topic because it is considered a big and real problem that can negatively affect the development of the level of these teams.

The objectives of this research to reveal the level morale among the players of the Anbar Governorate teams for disabled, in addition to identifying the effect of age, experience and academic achievement on level morale of these players.

Previous studies related to this research are represented by the study (Jawarneh et al., 2011) which was conducted in Zarqa Governorate / Hashemite Kingdom of Jordan and aimed to reveal the level of morale among primary school teachers in Zarqa Governorate in addition to identifying the effect of gender, specialization, academic achievement and experience on the level of morale among these teachers. The research sample included 154 teachers, and the study concluded that the level of morale was low in addition to the effect of specialization and experience and the absence of an effect of gender and academic achievement on the level of morale of these teachers. As for the study (Mohammed, 2012), it aimed to: identify the level of morale among teachers in some Algerian universities in addition to knowing the statistical differences between these teachers. The study sample consisted of 320 teachers and the study concluded that the level of morale was moderate and there were statistical differences in the level of morale in favor of teachers at the University of Oran. As for the study (Saheb et al., 2016) aimed to: identify the method of raising the level of morale among Iraqi knights. The research sample consisted of 23 Iraqi knights and participants in Arab and international championships. The study concluded that material and moral incentives and rewards are among the most important methods of raising the level of morale among these knights.

Method and tools

The researcher used descriptive approach using case study method because this method is compatible with this research and can achieve its objectives and answer its questions, The research sample included all players of the Anbar Governorate teams for disabled in the sports of weightlifting, athletics, table tennis, darts and fencing. Their number was (25) players, as explains in Table (1); in order to achieve the objectives of this research, the researcher designed a morale questionnaire after reviewing many researches and studies related to morale. After that, the researcher formulated (40) paragraphs distributed in to (4) fields, with (10) paragraphs for each field, the researcher presented these fields and paragraphs to some experts, as explains in Appendix (1), to judge their validity and to choose the appreciation ladder who is suitable for this questionnaire after the researcher chose the five-point appreciation ladder. All experts agreed on the validity and sufficiency of the four fields. As for the paragraphs, some paragraphs were deleted and modified, and some paragraphs were merged based on experts' opinion, so that the final number of paragraphs would be (36) paragraphs, all experts also agreed to choose the five-point appreciation ladder. After that, the (36) paragraphs were entered in the form of

a questionnaire and distributed to a limited number of sample members, numbering (12) players who were chosen randomly. The process of designing the questionnaire and distributing it to sample members

took a period of two months. After sorting the sample's answers, the researcher applied the discriminating power law and excluded the paragraphs whose discriminating power was less than (40%), and their number was only (4) paragraphs. After that, the researcher applied the difficulty level law and excluded only one paragraph whose difficulty level was higher than (80%). To verify the validity of this questionnaire, the researcher presented the questionnaire to experts, and all of these experts agreed that this questionnaire was suitable for application. In addition, the researcher kept only the paragraphs that received the experts' approval by 80% or more, and these percentages are sufficient indicators to indicate this questionnaire has apparent validity. To ensure the stability of this questionnaire, the researcher used the law of division into two halves. The researcher also calculated the stability coefficient using the (Siberman-Brown) correlation coefficient law, and the correlation coefficient was equal to (0.87). When compared to the tabular value and below the level of (0.01) corresponding to the degree of freedom (10), which is equal to (0.746), we find that the test is stable and has a high moral significance. After conducting the previous statistical operations, the morale questionnaire became ready for application in its final form, consisting of (31) paragraphs, as explains in Appendix (2). To know the level of morale among the research sample, the researcher calculated the highest score for the questionnaire, which is (155), and lowest score, which is (31). After that, the researcher determined (5) standard levels for morale, which are (very good, good, average, below average, weak), as explains in Table (2) (4)

Table (1) explains the names of the teams, the number of players, and the type of sport

Number of players	The team	Seq
11	Athletics	1
6	weightlifting	2
3	table tennis	3
3	Throwing darts	4
2	fencing	5
25	Total	

Table (2) explains the arithmetic mean limits for questionnaire scores and standard levels the research sample

Seq	Arithmetic mean limits	Standard levels
1	55 — 31	weak
2	80 — 56	below average
3	81 — 105	average
4	106 — 130	good
5	155 — -131	very good

The results

To answer the question (What is the level of morale among the players of the Anbar Governorate teams for the disabled?), the researcher calculated the score of each player through his answer to the morale questionnaire. After that, the researcher analyzed the players' scores, where it became clear that the percentage of players within the level (good) and up to the level (very good) is (40%) of the research sample, and the percentage of players within the level (average) and down to the level (weak) reached (60%) of the research sample, which is more than half. This indicates a low level of morale among most members of the research sample, as explains in Table (3).(5)

Table (3) It explains the results of the research sample levels

Seq	The level	Number of research sample members	Percent
1	very good	3	12%
2	good	7	28%
3	average	9	36%
4	below average	4	16%
5	weak	2	8%
Total		25	100%

To identify the most important factors that led to the low level of morale among the research sample members, the researcher analyzed the questionnaire paragraphs and calculated the weighted average and percentage weight for each paragraph, And discussing the paragraphs that received a weighted average less than the theoretical average, which is equal to (3), and a percentage weight less than the theoretical average, which is (60%), which contributed to lowering the level of morale among most of the research sample members, as shown in Table (4). Discussing the paragraphs that received a weighted average less than the theoretical average, which is equal to (3), and a percentage weight less than the theoretical average, which is (60%), which contributed to lowering the level of morale among most of the research sample members, as explains in Table (4). It was found that there were (7) paragraphs that obtained a weighted average and a percentage weight less than the theoretical average, which are: Paragraph (2) (I

feel safe and stable with my team), paragraph (4) (I feel that my financial income is good), paragraph (15) (I see that the social status of disabled sports is good), paragraph (17) (Training curricula for disabled sports meet the desires and capabilities of the players), paragraph (18) (The policy dealing followed by the club I play for is consistent with my personal convictions), paragraph (26) (I feel that the club's management gives me opportunities for excellence and creativity), and paragraph (29) (I look optimistically at my sporting future), all of the previous paragraphs fall within the material dimension and the internal and external work environment. The researcher believes that the reason for this is the feeling of most members of the research sample that the financial incentives and rewards (Issa et al., 2024)

offered to them by the administrations of clubs or federations do not meet their ambitions or living needs, it is also not at the level of effort they put in during training or matches, this also affected their social

status compared to their peers in other sports teams without disabilities, in addition, the internal and external work environment, whether for the club or the federation, and the prevailing unipositive climate, had significant negative impact on the motivation and enthusiasm of the players, which led to a decrease in their general level of morale, (Kazar & Kazim, 2020) This is what has been confirmed by most studies and research, which have indicated that the most important factors that directly affect raising or lowering the level of morale of people working in any institution are salaries, wages, material and moral rewards, working conditions and requirements, and management's efficiency and trust in the institution's workers (Hanafi, 2005, p. 122). -125). (6)

Table (4) The weighted mean and percentage weight for each paragraph of the morale questionnaire

Seq	paragraph	weighted mean	centennial weight
1	I feel like I'm playing with friends on the team	3.24	64.8%
2	I feel safe and stable with my team	2.24	44.8%
3	I feel excited during the matches	3.11	62.2%
4	My financial income is good	2.12	42.4%
5	The coach raises my skill and physical level	3.88	77.6%
6	I feel like I belong to my team	4.32	86.4%
7	I feel a sense of collaboration with my coaches and teammates	4.08	81.6%
8	My relationship with the coach and players is built on mutual respect	3.72	74.4%
9	I accept the coach's criticism of me with open chest	4.16	83.2%

10	I help my teammates solve their personal problems	3.96	79.2%
11	Sports disabled are a sacred and noble message	3.24	64.8%
12	I am committed to implementing the regulations and laws in force within the club and the federation	4.76	95.2%
13	I take full responsibility within the team	4.80	96%
14	I find pleasure in playing matches with my team	3.28	65.6%
15	I feel that the social status of athletes with disabilities is good	2.40	48.4%
16	Practicing this game gives me self-confidence and self-affirmation	4.24	84.8%
17	I believe that the training curricula for disabled sports are compatible with the desires and abilities of the players	2.82	56.4%
18	The club's policies align with my personal convictions	2.18	43.6%
19	I come to training on time	3	60%
20	I make in a lot of effort during the training	3.96	79.2%
21	I attend team training regularly without any absences	4	80%
22	I feel proud and honored to be one of the players in this team	3.08	61.6%
23	I prefer my current team over other teams	3.60	72%
24	I don't feel remorse for being disabled	4.16	83.2%
25	I feel that playing sports does not affect my health	3.72	74.4%
26	The club management gives me opportunities to excel and be creative	2.24	44.8%
27	I deal with society with great openness	4.28	85.6%
28	When I don't attend training, I miss my teammates	3.72	74.4%

29	I look optimistically at my sporting future	2.33	46.6%
30	I never think about leaving the team	3.24	64.8%
31	I feel like I'm an important player on the team	4.32	84.4%

To answer the second question: (Are there statistically significant differences between the research sample members in terms of the level of morale due to age, experience, and academic achievement?), the researcher used the law of analysis of variance and extracted the calculated (F) value and compared it with the tabular (F) value, as explains in Tables (5), (6), (7), (8), (9), (10).

Table (5) Ages, percent and arithmetic mean for all members of the research sample

Ages	Player numbers	Percent	Arithmetic mean
25 years and under	8	32%	118.64
26 – 40 years	13	52%	108.11
41 years and over	4	16%	105

Table (6) Analysis of variance, calculated and tabulated (F) value, and significance of differences for the age variable

The type of differences for age variable	(F) value		Mean squares	Degree of freedom	sum of squares	Source of variance
	tabulated	calculated				
Not influential	3.44	1.39	401284.06	2	802568.12	Between groups
			288045.03	22	6336990.84	inside groups
				24	7139558.96	Total

Table (7) Number of years' experience, percent and arithmetic mean for all members of the research sample

Number of years' experience	Player numbers	Percent	Arithmetic mean
3 years and under	7	28%	118.6
4 – 6 years	14	56%	108.1
7 years and over	4	16%	104.8

Table (8) Analysis of variance, calculated and tabulated (F) value, and significance of differences for number of years' experience

The type of differences for age variable	(F) value		Mean squares	Degree of freedom	sum of squares	Source of variance
	tabulated	calculated				
Not influential	3.44	2.04	778.43	2	1556.86	Between groups
			380.4	22	8369.1	inside groups
				24	9925.96	Total

Table (9) Academic achievement, player numbers, percent and arithmetic mean for all members of the research sample

Academic achievement	Player numbers	Percent	Arithmetic mean
Bachelor	5	20%	116
Diploma	9	36%	109.7
Preparatory	11	44%	112.53

Table (10) Analysis of variance, calculated and tabulated (F) value, and significance of differences for academic achievement

The type of differences for age variable	(F) value		Mean squares	Degree of freedom	sum of squares	Source of variance
	tabulated	calculated				
Not influential	3.44	2.04	144.42	2	288.84	Between groups
			454.31	22	9995	inside groups
				24	10283.84	Total

The tables (5), (6), (7), (8), (9) and (10) indicate that there are no statistically significant differences between the research sample members. This indicates that the variables of age, experience and academic achievement do not affect the level of morale. The researcher believes that the reason for this is the similarity of the circumstances surrounding the players, whether inside or outside the club, in addition to the similarity of administrative methods in clubs and sports federations, as most of them do not create a positive atmosphere that encourages players to increase their giving and enthusiasm during competitions. In addition, the financial policies followed in most clubs and sports federations for the disabled do not meet the needs of the players. In addition, the low salaries and financial rewards have led most players in Anbar Governorate's teams for the disabled to feel frustrated, in addition to their feeling of low social status compared to other non-disabled players.(Kadhim et al., 2021)

Conclusions

- The percentage of the research sample members within the level (good) to the level (very good) was (40%), which is less than half, and the percentage of the research sample members within the level (average) to the level (weak) was (60%), which is more than half, and these percentages indicate a low level of morale among most players of the Anbar Governorate teams for the disabled.
- There are no statistically significant differences between the players of the Anbar Governorate teams for the disabled in the level of morale, and this indicates that the variables of age, experience and academic achievement do not affect the level of morale among the players of the Anbar Governorate teams for the disabled.

Recommendations

- Reconsider the levels of salaries and financial rewards for members of the research sample and make them equal to the players of other teams.
- Attention to the human and social aspects in addition to the technical and administrative aspects in the clubs and federations to which the research sample members belong.
- Club and federation administrations should provide an atmosphere of familiarity and affection among the members of the research sample by encouraging play in a team spirit.
- The need to conduct more studies and research on the level of morale among players of disabled teams and to select other samples and other variables.

Extensions

Names of the experts who evaluated the morale questionnaire

Seq	Name of expert	Workplace
1	Prof. Dr. Salih Shafi Sajet	University of Anbar / College of Physical Education and Sports Sciences
2	Prof. Dr. Saad Munim Al-Shaikhli	University of Baghdad / Student Activities Department
3	Prof. Dr. Fatima eabd Maleh	University of Baghdad / College of Physical Education and Sports Sciences for Girls
4	Prof. Dr. Mohamed Abdel Wahab Hussein	University of Basra / College of Physical Education and Sports Sciences
5	Prof. Dr. Wissam Falah Attia	University of Basra / College of Physical Education and Sports Sciences

Final version of the morale questionnaire for disabled players

Seq	paragraph	Totally agree	Agree	Neutral	Disagree	Totally disagree
1	I feel like I'm playing with friends on the team					
2	I feel safe and stable with my team					
3	I feel excited during the matches					
4	My financial income is good					
5	The coach raises my skill and physical level					

6	I feel like I belong to my team					
7	I feel a sense of collaboration with my coaches and teammates					
8	My relationship with the coach and players is built on mutual respect					
9	I accept the coach's criticism of me with open chest					
10	I help my teammates solve their personal problems					
11	Sports disabled are a sacred and noble message					
12	I am committed to implementing the regulations and laws in force within the club and the federation					
13	I take full responsibility within the team					
14	I find pleasure in playing matches with my team					
15	I feel that the social status of athletes with disabilities is good					
16	Practicing this game gives me self-confidence and self-affirmation					
17	I believe that the training curricula for disabled sports are compatible with the desires and abilities of the players					
18	The club's policies align with my personal convictions					
19	I come to training on time					

20	I make in a lot of effort during the training					
21	I attend team training regularly without any absences					
22	I feel proud and honored to be one of the players in this team					
23	I prefer my current team over other teams					
24	I don't feel remorse for being disabled					
25	I feel that playing sports does not affect my health					
26	The club management gives me opportunities to excel and be creative					
27	I deal with society with great openness					
28	When I don't attend training, I miss my teammates					
29	I look optimistically at my sporting future					
30	I never think about leaving the team					
31	I feel like I'm an important player on the team					

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Decision-Making Processes of Administrative Bodies in Sports Clubs Participating in the Iraqi Premier League for the 2022-2023 Football Season

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Abstract

The research aimed to examine decision-making among the administrative bodies of sports clubs participating in the Iraqi Premier League for the 2022-2023 football season. The researchers employed the descriptive (survey) method, which suits the nature of the study. The research population comprised 177 members of the administrative bodies of sports clubs involved in the Iraqi Premier League for the 2022-2023 season. A questionnaire was used to gather the necessary data to achieve the research objectives by applying a survey form designed to assess decision-making within the administrative bodies of these sports clubs. The main findings indicated that the decision-making practices of the administrative bodies of the Premier League football clubs were statistically significant, suggesting that these bodies possess the capacity for effective decision-making in addressing general issues. The effectiveness of decision-making among these administrative bodies, as measured by the scale, involved defining the problem, identifying and evaluating available alternatives, choosing the suitable alternative to solve the problem, and monitoring and evaluating the implementation of the decision, though they faced challenges in data and information collection.

Keywords: Decision-making, Administrative bodies, Football

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Introduction

Decision-making in administrative fields has received significant attention due to its role in enabling organizations to continue their activities efficiently and effectively. Decision-making is "primarily based on future predictions and achieves its potential through anticipated expectations. Furthermore, the complexity of administrative tasks and the demands of modern performance, coupled with scientific and technological advancements, have presented challenges for administration, making traditional methods of relying solely on personal experience and trial and error insufficient for achieving organizational objectives" (Abdul Muneim, 2022). Decision-making is among the crucial responsibilities of administrative bodies tasked with leading sports clubs, requiring substantial effort and objectivity, free from personal biases. Decision-making serves as the backbone of the administrative process, being the decisive point in management. For an administrative body to make sound decisions, it must possess the skills and competence to identify problems accurately, understand and analyze solutions, and select appropriate alternatives. Ibrahim (2000, p. 114) notes, "A decision-maker must possess a knowledgeable and experienced character to overcome challenges that may arise during the administrative process." Sound decision-making requires specific criteria to guide administrative bodies in making timely decisions.

The researchers believe that decision-making is an essential function of the administrative body, which serves as the club's on-ground leadership in its administrative role, especially given the various challenges it encounters. The decision itself represents an intended goal and a means to achieve it. The success of the administrative body depends on its ability to understand and execute administrative decisions effectively. This necessitates clarity, timeliness, and diligent follow-up on implementation and evaluation.

This background highlights the research problem, which aims to explore some of the interrelated aspects needed for harmony in the work of the administrative bodies of Iraqi Premier League football clubs. It seeks to identify administrative weaknesses affecting performance and competitiveness while assessing the decision-making capabilities of these bodies. Additionally, decision-making is crucial for administrative bodies aiming to develop sports administration according to scientifically and logically grounded principles.

Based on this, the researchers reviewed related studies focusing on the variables under investigation, including:

Study on Psychological Stress and Its Impact on Decision-Making among Sports Club Administrators (Abdul Muneim, 2022): This study aimed to examine the influence of psychological stress on decision-making among sports club administrators. Using a descriptive survey approach, the researcher applied a questionnaire to a sample of 85 administrators in Aswan sports clubs,

divided into exploratory and main samples. The study concluded a statistically significant positive correlation between psychological stress and decision-making capacity among Aswan club administrators.

Study on Developing and Standardizing a Decision-Making Scale for Leaders of Olympic Sports Federations from Employees' Perspectives (Attiya & Mohammed, 2021): This research highlights the importance of decision-making in sports administration, particularly in national sports federations. It aimed to create and standardize a decision-making scale for leaders of Olympic sports federations. Using a descriptive method, a sample of 163 national team coaches for Olympic federations was selected. The study found varying responses and recommended the development and standardization of decision-making scales for these leaders.

Study on Decision-Making in Sports Administration and Its Role in Achieving Employee Excellence (Al-Hassan, 2020): This study focused on understanding the role of decision-making in achieving employee excellence in the Directorate of Youth and Sports in M'Sila. The study emphasized that organizational progress relies heavily on competent administrative leadership. Using a descriptive approach, it included 30 employees and offered suggestions such as adopting modern techniques for problem-solving in sports institutions and ensuring strategic decision-making review.

Performance Measurement in Decision-Making among Sports Leaders in University Sports Departments in Jordan (Asilah, 2018): This study aimed to assess performance measurement in decision-making within Jordanian university sports departments, examining the influence of educational background and university affiliation on decision-making. The study applied a survey to 25 sports supervisors across four Jordanian universities. Results indicated statistically significant differences favoring a more democratic and scientific approach over individualistic decision-making.

Methodology and Tools: The researchers used a descriptive survey approach suitable for the study. They coordinated with the Iraqi Football Association to identify the Iraqi Premier League football clubs for the 2022-2023 season, confirming a population of 20 sports clubs and 177 administrative members through the Ministry of Youth and Sports. The sample included all 20 clubs, representing 100% of the population, as shown in Tables (1) and (2).

Table (1) shows the research community and its sample

Samples					
S	Club Name	Administrative ly Numbers	S	Club Name	Administrative ly Numbers
1	Al-Zawraa	10	11	Duhok	9
2	Al-Quwa Al- iya	7	12	Newroz SC	9
3	Al-Talaba SC	7	13	Al-Najaf SC	8
4	Al-Shorta SC	10	14	Naft Al-Wasat	9
5	Al-Karkh SC	7	15	Naft Al- raa SC	10
6	Al-Hedood SC	8	16	Karbalaa	10
7	Al-Sena'a SC	9	17	Al-Qasim	9
8	Al-Kahraba	10	18	Zakho	9
9	Al-Naft SC	9	19	Al-Naft SC	9
10	Naft Maysan	10	20	Al-Diwaniya	8
Total		177			

Research Tools:

The research tools for both theoretical and practical aspects included a range of sources, such as books, studies, research papers, articles, theses, and online resources. For the practical field aspect, the researchers conducted field visits and personal interviews at the headquarters and stadiums of Iraqi Premier League football clubs for the 2022-2023 season, along with field

observations. The primary tool used was a specialized questionnaire form designed by the researchers to collect essential data, which included a decision-making scale encompassing five key domains: problem identification, data and information collection, identification and evaluation of available alternatives, selection of the appropriate alternative to solve the problem, and follow-up and evaluation of decision implementation. The researchers applied this scale to a sample of 177 administrative body members, analyzing responses to assign a specific score to each participant.

Scientific Validity of the Decision-Making Scale:

Scale Validity: Validity is a crucial requirement for a reliable scale, indicating how closely the scale items align with the attribute it aims to measure. The researchers established face validity by having experts and specialists review the scale's items and domains, confirming its suitability for application. The researchers also calculated discriminative power by finding the mean and standard deviation scores of the high and low groups in each domain, followed by applying an independent samples t-test to determine statistical significance. The results showed significant discriminative power in the scale items, as significance values were below the 0.05 threshold.

Scale Reliability: Reliability is essential for a scale's consistent performance; repeated measurements of the same individual should yield stable scores. To determine the reliability of the decision-making scale, the researchers employed split-half reliability and Cronbach's alpha coefficient, which confirmed high reliability values, making the scale dependable.

Results: The results of the decision-making scale for the administrative bodies of Premier League football clubs were presented and analyzed. Mean and standard deviation scores of the responses were calculated for each item on the decision-making scale across the five domains: problem identification, data and information collection, identification of available alternatives, selection of the suitable alternative to solve the problem, and follow-up and evaluation of decision implementation. These results are displayed in Table (2), which includes mean scores, standard deviations, skewness, hypothetical mean, and significance for the responses of the research sample members.

Table (2) Presentation of mean scores, standard deviations, skewness, hypothetical mean, and significance of the decision-making scale scores for the responses of the research sample members.

Domain	Arithm mean	Stand deviation	S	Hypothet l mean	t	R	Significa
Defining problem	24.825	3.827	-	21	8.93	0.0	معنوي
Collecting and ormation	26.500	2.737	.55	27	1.63	0.1	غير معنوي
Identifying evaluating lible rnatives	22.837	3.849	-	18	11.2	0.0	معنوي
Choosing appropriate rnative to solve problem	24.975	3.493	.34	21	10.1	0.0	معنوي
Following on the lementation of decision and luating it	23.050	3.744	.31	18	12.0	0.0	معنوي
Scale score	122.18	9.217	.11	105	16.6	0.0	معنوي

Analysis From Table (2), it is evident that the decision-making score for the administrative bodies of Premier League football clubs shows a mean of (122.18), with a standard deviation of (9.217) and a hypothetical mean of (105), at an error level of (0.000), indicating a significant difference from the hypothetical mean, which is higher than the latter.

The researchers attribute this result to the administrative bodies' awareness of the importance of their decisions and their appropriateness to the situations in which they were made. This awareness facilitates the clubs' progress in the right direction, clearly demonstrating the administrative bodies' belief in, sensitivity to, (Abdulhussein et al., 2024) and appreciation of their responsibilities. One of the key factors for the success of these administrative bodies is their ability to make decisions that require awareness and deep thought in various situations and to make these decisions promptly. Decision-making is a fundamental function of the administrative bodies in their efforts to achieve success. It is a continuous process, (Easa et al., 2022) as these bodies operate within a series of diverse decisions across administrative and technical domains. Decision-making is at the core of the administrative process, serving as the foundation for all management functions, including planning, organizing, directing, and controlling. Each of these functions relies on a set of critical management decisions. Decision-making is the tool through which administrative bodies carry out their work by determining what needs to be done, who will do it, (HalalAtiyah et al., 2024) and when it should be done. Therefore, the more capable the administrative bodies are in making appropriate and accurate decisions, the higher their administrative performance level, significantly impacting the club's success or failure. This is confirmed by Khalasi's study (2007, p. 48), (Kadhim, 2023) which states that "decision-making plays an essential role in embodying, adapting, interpreting, and applying the organization's objectives and general strategy." As discussed, decision-making is a dynamic process; administrative bodies must monitor and follow up on the results of their decisions. This process begins with identifying the problem, gathering information, analyzing, and addressing it, (Kazar & Kazim, 2020) allowing for the determination of possible alternatives and the selection of the best solution. Notably, when designing decisions, administrative bodies should analyze, organize, plan for, and evaluate the decision's implementation and management. The administrative body is entrusted with making every effort to arrive at sound decisions.

Decision-Making Domains: In the area of problem identification, the mean score was (24.825) with a standard deviation of (3.827) and a hypothetical mean of (21), at an error level of (0.000), indicating a significant difference above the hypothetical mean.

The researchers attribute this result to the administrative bodies' ability to identify problems they face in their work, despite the pressures and competition in the league. The problem identification stage is a crucial step in decision-making for the administrative bodies. Proper problem identification and diagnosis require precision and clarity, (Mahmood & Kadhim, 2023) so they can address the problem effectively. This involves studying the causes, gathering and analyzing related information, and assessing the feasibility of potential solutions and the availability of necessary resources for implementation. Before making decisions, it is essential in administrative work to understand the different aspects of the problem, diagnosing and defining it by type and root

causes to reach a sound decision that achieves the desired objectives. Tawfiq and Al-Quraishi (2006, p. 231) emphasize that "the primary benefit of creativity in decision-making lies in identifying problems and defining their dimensions clearly and accurately, aiding in formulating solutions, alternatives, and exploring innovative approaches while fully controlling work obstacles." This study aligns with Al-Hassan's study (2020, p. 83) on the role of problem diagnosis in decision-making, highlighting its significant impact on achieving outstanding performance. (Mohsen et al., 2024)

In the area of data and information gathering, the mean score was relatively low at (26.500) with a standard deviation of (2.737) and a hypothetical mean of (27), at an error level of (0.106), indicating an insignificant difference below the hypothetical mean. (Ahmed Amer Abdul Hussein, 2020)

The researchers suggest that this points to a weakness among the administrative bodies of Premier League football clubs in gathering data and information, (Hammood et al., 2024) which could impact the accuracy of the decisions made. Decisions made with inadequate data or weak data collection on relevant issues can negatively affect desired outcomes. Information gathering helps thoroughly examine a decision before it is made, leading to an informed choice that aligns with the set objective. (Mandoob Makki Ati et al., 2024) Different solutions vary based on the nature and context of each problem. Thus, collecting data and information plays a critical role in identifying ideal solutions during decision-making. Expertise and skill in information gathering, as well as consulting with experts, significantly contribute to successful decision-making. This is affirmed by Qasemi (2021, p. 36), who states, "Through studying, analyzing, researching, and gathering information on the problem, decision-makers enhance their knowledge, facilitating a solution. Solving some problems depends on experience, (Saad et al., 2023) logical thinking, and the systematic approach of the decision-maker and their qualification and competence." Therefore, administrative bodies should acquire as much data and information as possible through various methods to reach sound decisions. This is consistent with Sokhri's study (2016, p. 83), which concludes that "information quality positively impacts decision-making, and timely access to improved information enhances decision-making quality. Decisions based on available information systems are credible in the sports organization."

In the domain of identifying and evaluating available alternatives, the mean score was (22.837) with a standard deviation of (3.849) and a hypothetical mean of (18), at an error level of (0.000), indicating a significant difference above the hypothetical mean.

The researchers conclude that these results show the administrative body members' ability to identify alternatives to resolve the issues they face, assisting in reaching sound decisions. This

signifies that they are competent in recognizing potential solutions or alternatives when making decisions. This stage requires foresight and a broad perspective to identify various alternatives, evaluate them, review information, consider others' opinions, and select the best option to achieve the decision-making objectives. Generating a list of flexible, practical alternatives enables viable solutions for decision-making. This aligns with Al-Hassan (2020, p. 78), who notes that "the stage of available solutions and their evaluation involves identifying at least two solutions, with participation fostering idea sharing, generating as many ideas as possible, and combining and refining ideas to reach a sound decision." Harrison describes decision-making as "an ongoing process of evaluating alternatives to achieve a specific objective" (Hammoud, 2012, p. 179). This step assesses each alternative's strengths and weaknesses, depending on the accuracy of the related information.

For the domain of choosing the suitable alternative to solve the problem, the mean score was (24.975) with a standard deviation of (3.493) and a hypothetical mean of (21), at an error level of (0.000), indicating a significant difference above the hypothetical mean.

The researchers attribute this to the administrative bodies' understanding of the importance of their decisions in achieving desired outcomes, (Zghayer & Kadhim, 2014) representing their vision and goals, which are documented as decisions that contribute to their aspirations and perseverance toward success. By making decisions that improve club effectiveness and help prevent problems, administrative bodies exchange views to select the best alternative. This phase requires in-depth study of each alternative's efficiency and expected return. Hasty decisions are avoided to ensure a suitable choice is made. Farhan and Saud (2018, p. 47) assert that "the decision-maker should anticipate both negative and positive outcomes based on the alternatives, thoroughly examining each one's advantages and disadvantages and assessing it against established criteria."

In the domain of monitoring and evaluating decision implementation, the mean score was (23.050) with a standard deviation of (3.744) and a hypothetical mean of (18), at an error level of (0.000), indicating a significant difference above the hypothetical mean. (Yasir & Sikhe, 2020)

The researchers observe that these results indicate the administrative body members' ability to monitor and evaluate decision implementation, marking the final stage of decision-making, through which the decision's success or failure is assessed. This process involves various steps, including delegating responsible personnel, defining responsibilities, implementing procedures, evaluation methods, success measurement, addressing issues during implementation, and formulating backup plans. This phase allows the administrative body to detect early issues with the decision, execute it with realism and accuracy, and foster a sense of accountability. Atwi (2004, p. 303) emphasizes that "evaluation is an organized and purposeful process that assesses decision

success in achieving targeted objectives." Evaluation is continuous, helping administrative bodies correct negatives, reinforce positives, confirm or reject decisions, understand final results, and prevent recurrent issues. Decisions should align with the objectives of the implementing personnel (club employees), positively affecting performance improvement.(Rija, 2023)

Conclusions and Recommendations:

Following their research and analysis, the researchers drew several conclusions:

The current state of decision-making among the administrative bodies of Premier League football clubs is statistically significant, indicating that they possess the ability to make effective decisions for problem-solving.

The effectiveness of decision-making among the administrative bodies of Premier League football clubs, according to the scale domains, was evident in problem identification, identifying and evaluating alternatives, selecting the suitable alternative, and monitoring and evaluating implementation, while data and information collection showed weakness.

Based on these conclusions, the researchers recommend:

Emphasizing the collection and provision of sufficient data and information on problems before making decisions.

To achieve the administrative body's objectives and programs, focused efforts, follow-up, and empowerment of decisions are essential to ensure desired program and plan outcomes.

Prioritizing decisions that enhance the club, technical staff, and employees, and involving employees in the decision-making process to boost decision effectiveness and loyalty to the club.

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Small-sided game activities impact the specific motor skills and skill-related competencies of football players between the ages of 12 and 14 years

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Abstract:

This research aims to investigate the effects of S.S.G. exercises on motor and skill competencies in individuals aged 12 to 14 years. The playing style fulfills several objectives for coaches to enhance the proficiency of their players, particularly in age-specific categories. Motor abilities immediately influence skill capabilities, thereby conferring a significant advantage to the team. Age groups require emphasis since they constitute the essential foundation for elite teams and the extensive base for national teams. Consequently, they ought to be advanced to more rigorous and meticulously designed training to attain superior performance levels. The experimental approach employed a one-group design, with a sample including 15 players from the Baghdad Karkh Sports Talent Center for football. A collection of instruments was utilized, comprising goals of diverse heights and dimensions, ten regulation soccer balls, cones and markers, training platforms of varying elevations, a POLAR-TEAM intensity measuring device, and a protractor. The statistical software (SPSS) was utilized to compute the mean, median, standard deviation, skewness, and T-test for linked samples. The researchers determined that the motor and skill abilities of the study group improved at varying rates; nevertheless, the effectiveness regarding endurance and rolling speed was limited. The activities executed resulted in a more significant enhancement in skill capabilities relative to motor abilities. The implementation of applied exercises tailored for various age groups in training centers involves the design of diverse exercises, configurations, and environments, as well as the number of participants. Additionally, it focuses on developing more effective playing strategies and underscores the utilization of

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modern equipment to precisely calibrate training intensity standards, including the system. POLAR-TEAM.

Keywords: passing precision, rolling velocity, agility.

Introduction:

The contemporary game of football has garnered the interest of researchers, experts, and enthusiasts due to the swift advancements in training and playing techniques, generating excitement and delight for players, coaches, and fans alike. The advancement in football is attributable to a holistic endeavor encompassing disciplines associated with physical education and sports sciences. The use of these sciences is regarded as a robust foundation for attaining optimal outcomes, guiding us towards future achievement, contingent upon effective planning. The variety of contemporary training methods enhances players' performance in alignment with the advancement of modern playing techniques. Therefore, it is crucial for us as researchers to identify the most effective training methodologies that can adapt to the advancements in specialized activities and navigate the evolving dynamics of football. Small-sided games (S.S.G.) are regarded as a training approach that alternates between generating excitement and imitating competitive environments, culminating in the skill of scoring, which is the logical conclusion to every offensive endeavor. The S.S.G. must consistently incorporate physical, technical, tactical, and mental dimensions to enhance the efficacy of the training units. (Doewes et al., 2020).

The S.S.G. exercises are a training method that utilizes a scaled-down football match, facilitating increased ball contact and promoting continuous movement for players without extended pauses. Training methods are regarded as the fundamental and contributory factor in the coach's engagement with players, seeking to cultivate their skills in accordance with the demands of contemporary football. The researchers assert that football schools in Iraq employ conventional training techniques, frequently resulting in monotony for numerous players. The researchers, serving as instructors in football academies, want to implement training methods that actively involve players and enhance their motivation for training and development. Consequently, the researchers proposed the implementation of contemporary training exercises that correspond with the demands of modern football, marked by fluctuating competitive scenarios. Consequently, the research subject encompasses two aspects: firstly, the deficiency in certain motor skills and fundamental abilities of the athletes. Secondly, there is a lack of diversity in modern training approaches.

Minor games enhance motivation and exhilaration in training by fostering teamwork, mirroring the dynamics of a football match through the application of fundamental abilities. (Ali, 2022). Small games play a crucial role in establishing a physical and skill-based foundation, enhancing player effectiveness within a team, and fostering a competitive

mindset, all of which are essential for skill mastery and improvement (Ali, 2022). (Jameel and Laidh, 2019). The recent exercises employing the small-sided games methodology enhance the participants' performance levels, capacities, and talents. (Alhayali & Khalif, 2022). Consequently, foundational training for age groups should prioritize motor abilities or skills, since they are essential for establishing an appropriate training trajectory from a young age, surpassing the importance of individual physical attributes, although the latter should not be substantially overlooked. Consequently, it is essential to incorporate short games in the acquisition of motor abilities. (Nazar, A., & Aladdin, 2018). These activities enhance specific physical capabilities and augment the motor speed of young football players. (Alrubae and Kareem, 2015).

Method and tools:

The experimental approach employed a one-group design, with a sample including 15 players from the Sports Talent Center for Football in Baghdad, Karkh. A collection of equipment was utilized, comprising goals of diverse heights and dimensions, ten regulation footballs, cones and markers, training benches of varying sizes, a protractor, and a strain monitoring apparatus. POLAR-TEAM.

Tests:

Initial: Performance endurance assessment (60 seconds) average (Asliyo, 2022, p. 74):

The objective of the assessment is to evaluate performance endurance. The instruments utilized comprise a platform measuring $0.5 \times 0.5 \times 2$ meters and a soccer ball. Upon hearing the whistle, the player strikes the ball from a distance of 2 meters towards a 2-meter-wide platform and continues to pass after the ball rebounds for 60 seconds. The quantity of passes executed by the player within a 60-second interval is recorded.

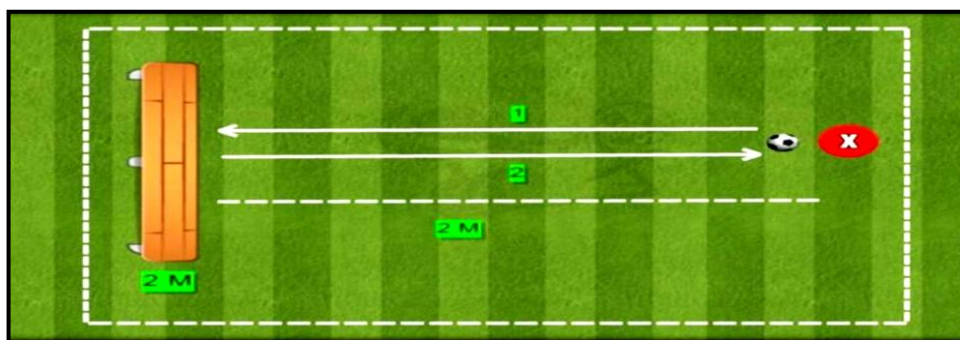


Figure (1) Performance endurance test (60 seconds)

Secondly: Reactive Agility Test (Pojskic, et al., 2018):

The objective of the test is to assess the duration of reactive agility. The instruments employed included six markers, a stopwatch, a measuring tape, and a protractor to ascertain the angles. The tester begins at the starting line and accelerates to maximum velocity in a straight trajectory of 5 meters. At this point (Trigger-Gate), the individual positioned at the conclusion of the assessment (Reactive-Gate) randomly elevates their arm to the right or left for each trial. The tester must react to the signal and complete the test. Exit Gate. The mean duration of the six trial efforts is computed.

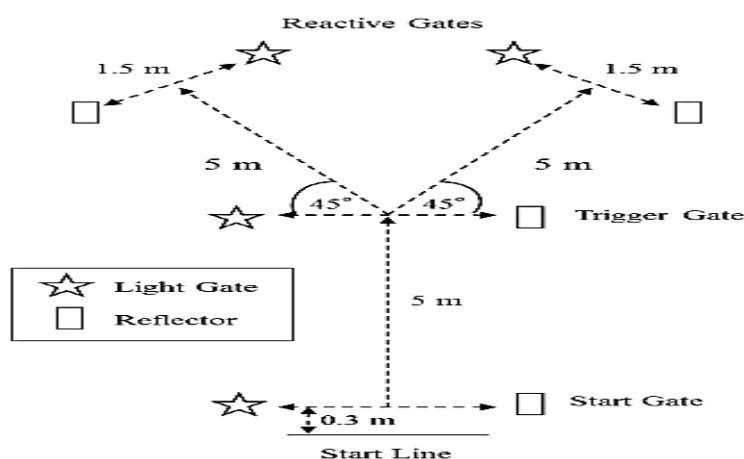


Figure (2) Reactive Agility Test (Reactive Agility)

Third: Motor speed assessment (Asliouh, 2022, p. 73): The purpose of the test is to assess kinetic velocity. The instruments employed comprised a whistle, a stopwatch, two platforms (0.5×2 meters), a soccer ball, and a measuring tape. Upon hearing the whistle, the player kicks a single ball from a distance of 1.50 meters toward two opposing platforms, each situated 2 meters away. The ball is exchanged back and forth for 10 seconds, utilizing the same ball and moving in opposite directions toward the platforms. The quantity of passes executed by the player within a 10-second interval is recorded.

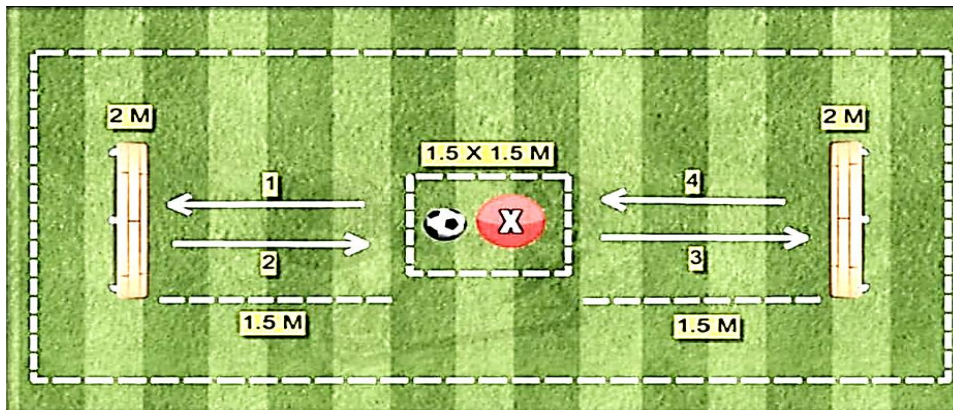


Figure (3) Motor Speed Test

Fourth, the passing accuracy assessment (Raad, 1999):

The objective of the test is to assess the precision and velocity of passing to a small target situated 15 meters distant. The equipment utilized included five soccer balls, one goal measuring 1×0.75 meters, a measuring tape, and colored adhesive tape. The beginning line is established at a length of one meter, positioned fifteen meters from the little goal, with five balls arranged along the starting line. Upon the sounding of the starting whistle, the tester consecutively passes these balls toward the little goal. The overall score achieved by the tester from successfully passing five balls is determined by dividing it by the total performance duration as follows: 2 points for each successful attempt, 1 point if the ball contacts the post or crossbar without entering the goal and 0 points if the ball exits the small goal.

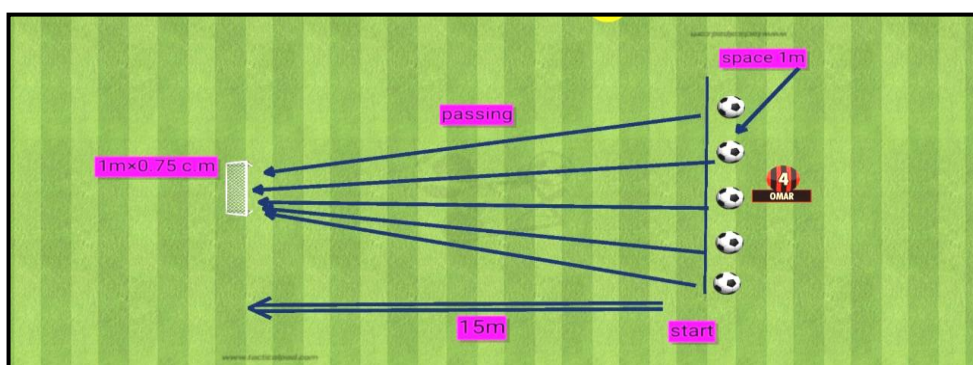


Figure (4) Handling Accuracy Test

Fifth: Rolling Speed Test (Ismail, 2002): The objective of the test is to assess the capacity for rapid rolling while altering direction (particular agility). The required equipment comprises a specified area with a starting line positioned 2 meters from the first

marker, followed by four markers spaced 1.5 meters apart, resulting in a total test distance of 8 meters and a total of 5 markers, in addition to a soccer ball. Upon receiving the start signal, the player swiftly rolls the ball, navigates past the five markers, and returns by traversing the markers to reach the start and finish lines in the minimum time achievable. The player may initiate passing the first marker from either the right or left side. If the ball exits the player's control, the attempt is deemed invalid. The participant is allotted two attempts, with the superior recorded time being considered. If the player surpasses one of the markers, the attempt is deemed invalid. The time is measured to the nearest 0.01 second.

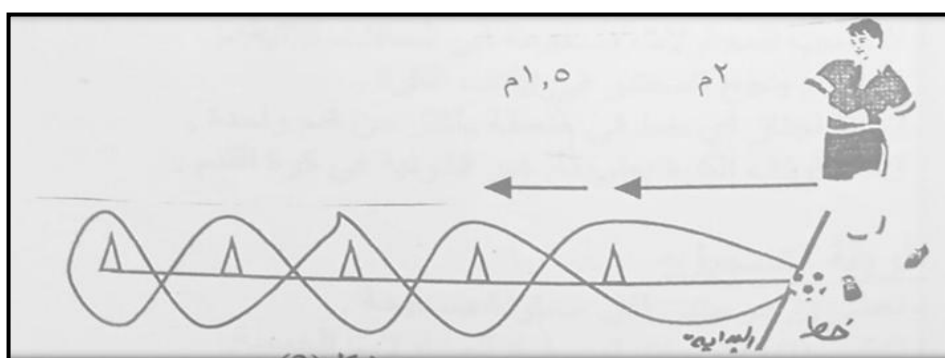


Figure (5) Rolling speed test

The sixth step is the ball reception and delivery assessment (Zuhair et al., 1999). The required equipment consists of five markers, five tiny goals measuring one meter in width and 0.5 meters in height, and five regular footballs. Five players are positioned in a linear arrangement with a separation of 2 meters between each individual, and five goals are situated 30 meters in front of them. The test player is positioned centrally between player one and goal one. Upon receiving the start signal, the test player obtains the ball from player number 1, swiftly pivots inside a designated radius of 2 meters situated centrally between the five goals and the sideline, and thereafter directs the ball towards goal number 1. This procedure is reiterated with the remaining teammates. The five players may pass the ball at varying elevations (ground level, medium height, high), and the test player is required to direct the ball towards the five goals while maintaining proximity to the ground. The ball's reception and control determine scoring. A point is granted for maintaining control within the specified 2-meter region, whereas no point is scored if the ball exits this zone. No points are granted for a missed target; however, one point is earned for each successful strike.

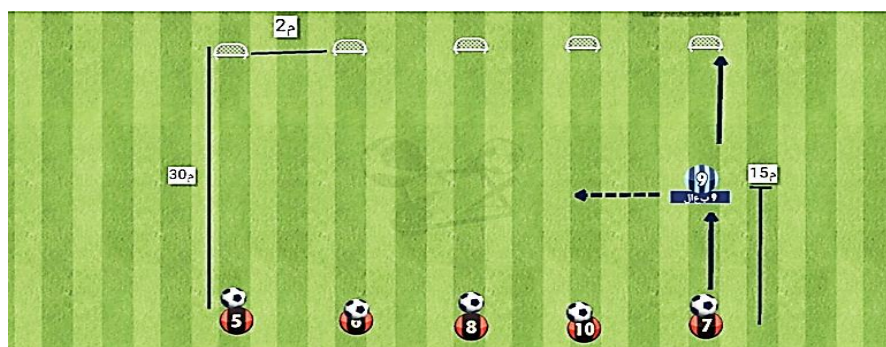


Figure (6) Acceptance and Delivery Test

The experiment:

Following the exploratory experiment on Saturday, January 7, 2023, the pre-tests for the skill assessments were administered on Wednesday, January 11, 2023, and the motor ability evaluations took place on Thursday, January 12, 2023. The researchers commenced the primary experiment on Saturday, January 14, 2023, which involved workouts tailored to S.S.G. games, incorporating three training sessions per week for each group on Saturday, Monday, and Wednesday. The course spanned 12 weeks, comprising 36 training units over a 3-month period. Each training unit had two exercises, each lasting 12 minutes, resulting in a total length of 24 minutes. The exercise intensity was determined using the Karvonen method and tracked via POLAR.TEAM, with intensities fluctuating between 70% and 85%.

The target heart rate is calculated by subtracting the age from the desired intensity. Training unit difficulty: Total (exercise volume $\times$ partial intensity)..... (2). Subsequent to the primary experiment, the post-skill assessments were administered on Wednesday, April 19, 2023, and the motor ability evaluations took place on Thursday, April 20, 2023.

The target heart rate is calculated by subtracting the age from the desired intensity. Training unit difficulty: Total (exercise volume $\times$ partial intensity)..... (2). Following completion of the primary experiment, the post-skill analyses were administered on Wednesday, April 19, 2023, and the motor ability evaluations took place on Thursday, April 20, 2023.

Results Table (1) Values of the Pre-Test and Post-Test Differences

Variables	The groups	S-	A±	F -S	A - F	H- A	T	Sig
1- Endurance performance/ Repetition	Before	35.73	2.02	-.400	.910	.235	1.702	.111
	After	36.13	1.64					
2- Interactive gility/ Thaa	Before	3.08	.262	.143	.129	.033	4.307	.001
	After	2.94	.235					
3- Speed Kinetic/ Repetition	Before	6.47	.834	-.400	.507	.131	3.055	.009
	After	6.87	.743					
4- Accuracy handling (m/s)	Before	.498	.146	-.084	.062	.016	5.211	.000
	After	.582	.130					
5- Speed Rolling/ sec	Before	10.28	1.19	.204	.455	.117	1.738	.104
	After	10.07	1.05					
6- Receiving and delivering The ball/ degree	Before	4.87	.990	-1.00	.655	.169	5.916	.000
	After	5.87	.743					

Degrees of freedom = 14... Significant at (Sig) ≤ (0.050).

Discussion:

A primary advantage of S.S.G is the enhanced engagement of players in executing appropriate passing decisions while preserving the essential contrasting attributes of the game. The examination of this subject is presently among the most debated topics in modern football research. Optimal benefits are attained when training stimuli reflect competition demands to cultivate technical and tactical proficiency in accordance with the exigencies of actual gameplay. (Hill-Haas et al., 2010). These games are optimal for enhancing training by fulfilling diverse physical fitness criteria alongside skill development and tactical decision-making. Consequently, they are extensively employed to improve fitness levels alongside technical and tactical abilities through many elements, including the number of participants, the dimensions and configuration of the field, the length of training sessions, and recovery intervals. Numerous studies have demonstrated that they influence players' physiological responses regarding endurance and speed by enhancing lactic components and aerobic capacity. (Jones & Drust, 2007). Furthermore, research indicates that S.S.G., in conjunction with enhancements in aerobic and anaerobic endurance, has contributed to advancements in players' performance regarding change of direction, agility, and technical skills across various age demographics (Dellal et al., 2011; Jensen et al., 2007). (Mallo, 2008). The researchers say that the differences in improvements in aerobic and anaerobic endurance are due to the type of workout program, which includes the number of participants, the space used, the length of the performance, and the breaks between sets. The training unit's objective drives the modification of these elements.

The data analysis findings indicated an enhancement in passing accuracy following a 6-week training session. These games are frequently employed in training sessions to enhance the physical and technical capabilities of football players. They consistently incorporate elements of physical, technical, tactical, and mental training to enhance efficiency. They constitute a training method executed like a football match on a smaller pitch, facilitating increased ball contact. (Santos et al., 2022). Generally, small-sided games (S.S.G.) involving fewer participants can elicit a faster heart rate compared to larger player setups. Compact gaming forms may be appropriate for either preserving or enhancing aerobic fitness by adjusting workout duration. Research has demonstrated that greater field sizes conceal the effects of variations in player numbers. Diverse field dimensions and configurations can provoke physiological and perceptual reactions, as well as motor activity from players at particular moments. Coaches can modify training intensity by altering field dimensions. (Kelly & Drust, 2008)and (Salman et al., 2022).

The researchers concur that an expanded field size obscures disparities among players, whether in skill or physicality, as a wider area facilitates increased mobility, diminishes the challenges of passing and receiving precision, and permits extended rest

intervals for players. This can be alleviated by instituting shorter training durations with intermediate rest intervals. Field dimensions suggest that training on a larger field enhances aerobic activity, attaining the lactate threshold at an exercise intensity between 61% and 76%. Nonetheless, prior research varies on this matter, with some indicating a lack of agreement on the influence of field size on players' physiological responses. The extended duration of the game may impact speed, causing participants to diminish their playing tempo. (Carling & Bloomfield, 2010)and (Mahmood & Kadhim, 2023).

The researchers believe that effective playtime can provide a potential explanation for the differences in physiological and physical effort, implying that coaches should carefully consider the size of the field if the goal of the exercise is to combine physical training stimulus with skill training or to minimize physical effort while increasing skill demands. When comparing long, continuous game execution times to brief, intermittent periods, it was discovered that players obtained faster speed repetitions and a higher running percentage when compared to continuous. One possible explanation for these findings is that the comparatively long rest intervals between exercises enabled improved recovery. (Fanchini et al., 2011)and (Hammood et al., 2024).

The researchers believe that S.S.G. (Small-Sided Games) are modified game forms in which the coach adds or subtracts the number of participating players to develop the team's tactical situation through movement instructions, positioning, and the player's quick solutions. Manipulating these formats has an instantaneous impact on players' reactions, particularly in terms of tactical behaviors, technical execution, physiological and physical requirements, and cooperative play. This can happen throughout several weeklong training sessions. (Clemente et al., 2020)and (Mohsen et al., 2024).

The researchers believe that the impacts indicated in (S.S.G) on tactical, technical, physiological, and physical conditions may vary depending on age group, amount of expertise, and fitness condition. While these games may enhance players' tactical, technical, and physical behaviors due to their resemblance to real-world play demands, it's likely that these adaptations won't be uniform for all players. However, based on the results of the tables and observations of players during training sessions, these games primarily affect internal physiological variables, which in turn improve the efficiency of external variables represented by physical variables, increasing the player's skill and tactical ability. As a result, they can be used to improve player adaptation to game conditions as well as harmony. According to studies, reaction time increases after physical fatigue during match periods because the player is unable to maintain performance at a level that matches the intensity of the game. This leads to a loss of efficiency in the neuromuscular recruitment mechanism, resulting in increased time for skillful and physical movements within the game's characteristics (Frýbort et al., 2016)and (Abdulhussein et al., 2024). In terms of players' overall technical ability, research has shown that physical weariness caused by insufficient

endurance training has a negative impact on the fundamental tactics of passing, dribbling, and kicking. Research in this subject has demonstrated that physical exhaustion has a negative impact on leg muscle strength and movement biomechanics. Reduced endurance and early fatigue tend to have a negative impact on technical basics that rely on movement precision and efficiency. (Snyder et al., 2019).

In terms of the pass's technical foundation, accuracy was reduced, as were the negative consequences of physical involvement on the pass, which resulted in a fall in short pass accuracy and an increase in committed errors. These findings lend support to the idea that a general decrease in endurance has a negative impact on activities including player movements and path changes based on the game situation. (Moniz et al., 2020) and (Easa et al., 2022). Furthermore, some studies have found that the technical basis for intercepting a pass is unaffected by the player's physical and physiological condition, with no change in the number of attempts or percentage of correct responses to ball interceptions after inducing physical fatigue. However, when their stamina and ability declined, players became less motivated to perform the interception. (Barte et al., 2020) and (Kadhim, 2023).

• Conclusions:

The researchers' S.S.G. game workouts resulted in improvements in the research group's motor and skill capacities at varying rates. However, they were not particularly effective in terms of endurance or rolling speed. The game workouts that were developed resulted in a faster rate of improvement in skill abilities than in motor abilities. The implementation of applied exercises for different age groups in training centers, along with the design of exercises with various shapes and spaces, as well as the number of players, has been implemented. Additionally, more effective playing strategies have been developed for these exercises, and the use of modern devices to accurately adjust training intensity standards, including the system, has been emphasized. (POLAR-TEAM).

• Appendix:

Appendix (1) Model for Training Units

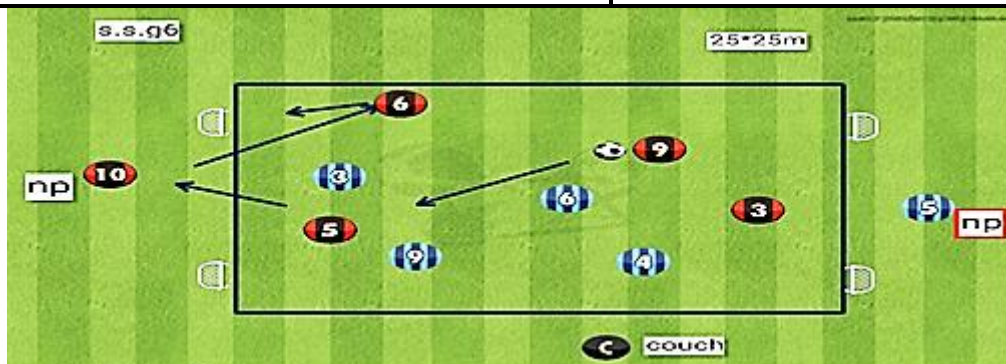
(First month): First week, Training unit 1	
Exercise 1	
- The playing space measures (25x25)m. - The training name is Match with Multiple Small Goals. - The number of players is four against four. - Tool used: Cones + jerseys (red and blue) + (4) mini goals + balls. We have red and blue sweaters and shirts, along with four small goals and balls. - Total exercise time: 16 minutes. - Three repetitions multiplied by four minutes each twelve minutes. - Rest for 2 minutes in between repetitions. Rest for two minutes in between repetitions. - Intensity: 70%, (144) reps per minute.	- The playing space measures (25x25)m. - The training name is Match with Multiple Small Goals. - The number of players is four against four. - Tool used: Cones + jerseys (red and blue) + (4) mini goals + balls. We have red and blue sweaters and shirts, along with four small goals and balls. - Total exercise time: 16 minutes. - Three repetitions multiplied by four minutes each twelve minutes. - Rest for 2 minutes in between repetitions. Rest for two minutes in between repetitions. - Intensity: 70%, (144) reps per minute.
	
Exercise 2	
- Key training points: 1. Improving attention and awareness for an aim on an unequal side. Attention and awareness are directed toward each goal on	- Play area: (20 × 20) m. - The training is named "Match with multiple Small Goals." - Number of players: four against four.

qual sides. Keeping the ball within the body (protecting Maintaining the ball within the body protecting it). Assisting the player in possession of the ball. Supporting the player in possession of the ball. Timing of support. Timing while in help mode. Spread throughout the field. Spreading across field. Training Objectives:) vs. (4), a team defends two goals and scores two. Scoring accuracy is comparable to a pass ooting accuracy like a pass. Physical performance (endurance plus speed agility while dribbling past an onent).Physical performance (endurance plus ed and agility while dribbling the opponent).	Tools used: Cones + small goals + shirts (red + blue) + s. We have cones, small goals, shirts in red blue, and balls. Total exercise time: (16) minutes. 3) repetitions × (4) minutes = (12) minutes. Rest between repetitions: 2 minutes. Rest between repetitions: (2) minutes. Intensity: 70%, 144 reps/min.
	

During the first month, the first week of Training Unit 2 includes Exercise 1.

The primary focus of training is to create umentation for the ball holder. You should pass ball to the player who is holding it. ay attention and keep your head up. Pay attention lift your head.	The playing space measures (25)m. he training name is Match with Multiple Goals. here are four players competing against
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Speed when changing directions with the ball. When shifting direction with the ball.	in other, plus one neutral player.
Training	Objectives:
Precise passing and shooting. Accuracy in passing and shooting.	Cones, small goals, red and blue shirts, neutral green balls are used.
Working on passes with a neutral player. You are practicing passes with a player who is impartial.	Total exercise time: 18 minutes.
Numerical edge with touches. A numerical increase in touches.	Three repetitions multiplied by four minutes equal twelve minutes.
The supporting player assists during the attack but does not participate in the defense. The supporting player's role is to assist with the offense rather than to intervene in defense.	Rest 3 minutes between repetitions. Rest three minutes between repetitions.
Physical training (endurance, speed, and reactive ability). Engaging in physical training enhances performance endurance, speed, and reactive agility.	Intensity: 70%, (144) reps per minute.



Exercise 2

Playing field measures 25 x 25 meters.	The playing space measures 25 x 25 meters.
The training program is called Match, and it includes several smaller goals.	The training name is Match with Multiple Goals.
Each team consists of three players.	There are a total of 12 players, with three players on each team.
Tools used: Cones, small goals, red shirts, blue, green, and yellow balls are used. We have cones, small goals, red shirts, blue, green, yellow, and balls.	Tool used: Cones, miniature goals, red shirts, blue,

Total exercise time: 18 minutes. Three repetitions multiplied by four minutes equals total of twelve minutes. Allow 3 minutes of rest between repetitions. The periods between repetitions are three minutes. Intensity: (70%), 144 repeat per minute.	en, and yellow balls are used. The items include cones, miniature goals, red shirts, e, green, and yellow balls. Total exercise time: 18 minutes. Three repetitions multiplied by four minutes equal twelve minutes. Rest 3 minutes between repetitions. Rest three minutes between repetitions. Intensity: 70%, (144) reps per minute.
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The use of positive rest in maintaining the level of creatine phosphokinases enzyme and the peak and average non-oxygen capacity of Iraqi Premier League football players during the transitional period

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Abstract

The importance of research has emerged through training during the transitional period and maintaining a certain level of physical and functional capabilities, highlighting the correct planning, and including the transitional period in the annual coach's curriculum until football players reach advanced levels, through various exercises that are different from the main event practiced by the player, and with moderate intensity.

As for the research problem, it was focused on the fact that there is a lack of focus by the coaches on the transitional period because they believe that it is outside the training season. This is what drives the player and the coach to start from scratch at the beginning of each new football season, due to the clear decline in the level of physical and functional performance. Therefore, the researcher decided to study this problem and develop appropriate solutions to it through various training for the transitional period and its impact on maintaining the level of some physical and functional capabilities of the Iraqi Premier League players in football.

Keywords: maintaining, creatine, phosphokinases enzyme, football players.

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Research Objectives:

1-Preparing various trainings to maintain the level of some physical and functional capabilities of the Iraqi Premier League players in football.

2-Identify the impact of various exercises to maintain the physical and functional capabilities of the Iraqi Premier League players in football.

3-Identifying the percentage of change in the level of some physical and functional abilities of the Iraqi Premier League players in football.

Research hypotheses:

1- There are no statistically significant differences between the results of the pre- and post-tests in the research variables of the control and experimental groups.

2- There are no statistically significant differences between the control and experimental groups in the post-tests.

As for the areas of research, conducting a pilot study designed by the two groups (control and experimental) on the players of (Karkh and Borders) football clubs, for the season (2022/2023). Within the period (4/8/2023) until (17/9/2023). In (the swimming pool, playgrounds, halls of physical education and sports science at the University of Baghdad), (the courts and halls of Al-Karkh Sports Club), (Al-Zawraa Recreational Park and Gardens), (the courts and halls of the Youth Sports Club), (the people's playground for beach ball and tennis ball), and (the pool of the Mashreq Club), the researcher conducted special physical and functional tests, namely: physical tests (spine flexibility test, horizontal jump explosive ability test, transition speed test, agility test, rapid ability test for the two men, and speed tolerance test). As for the functional tests, the researcher used biochemical tests (CPK enzyme concentration test, And the test to measure the level of LACTATE enzyme in the blood before and after the effort), and the physiological tests, the researcher used a bicycle (monark) and a device (fit MEETPRO) in the test (winjate test) to obtain the variables (peak capacity, maximum oxygen consumption VO2MAX, and energy expended in chlorine), and the researcher used a device (polar) to measure the heart rate before and after the effort, and the researcher conducted a number of exploratory experiments to ensure the safety of the research work and its details, and conducted pre-tests for the period (9,6,5,4/8/2023), and the researcher applied the training curriculum to the study sample by 5 weeks in the first two weeks, the exercises were by (3) times in As for the third, fourth and fifth week, the exercise became (4) times a week, i.e. (18) training units were implemented, and the average time of these exercises was (60) minutes, then the researcher conducted post-tests for the period (15-16-17 /9/2023), and the researcher concluded a number of conclusions (that the various exercises contributed to maintaining relatively at the level of physical, biochemical and functional variables) and the interruption of training for the control group during the transition period contributed significantly to the change in the level of physical, biochemical and functional capabilities) during the transition period of the control group, and the use of training or non-activity practiced has a role in preserving the physical and functional capabilities of players as well as its role in physical and functional recovery, as the researcher recommended the need to develop a training curriculum during the transition period to maintain the

relative level of physical and functional reached by players, the need not to interrupt training during the transition period, which has negative effects on football players.

Introduction

The progress in the field of sports and in most countries of the world was not born of chance, but was the result of the use of modern scientific means in planning and training and relying on scientific foundations in solving the problems that stand in the way of the athlete and prevent him from reaching the high level.

Perhaps the challenges faced by the development of sports and football in particular prompted the experts, specialists and training workers in football to always think about finding the best methods and methods that contribute to the development and upgrading of players' physical, skill, functional and other capabilities to meet the requirements of rapid and accurate performance of play, which leads to the achievement of great sports achievements at various levels.

Therefore, the transition period is one of the important stages in the annual training course (the preparation period in its public and private sections - the competition period - the transition period), which separates between the end of a season and the beginning of a new sports season, and the aim of which is positive rest to maintain a certain level of different physical abilities through activities and games different from what the athlete practices in football, when stopping training through recreational activities.

During this period, the coach can reduce the decline in the level of physical and functional performance, provided that he plans well for the preparation of various exercises for the transitional period with great care, and uses various means in which the aspect of suspense and recreation enters together. During this period, if it is dealt with positively by both parties (the training staff - the player), its results will be fruitful and reflect positively on the position and condition of the football player, especially physical and psychological, in preparation for the preparation period for the new season, in the sense that its beginning (from a low physical level) will not be if it deals with this period negatively, through wrong practices such as (excessive meals and unhelpful drinks - changing the natural sleep pattern - abandoning the ideal weight).

Hence, the importance of the research is that the transitional period is the period between the end of the season and the beginning of the preparation period, and the aim of it is to maintain a certain level of physical and functional capabilities, and since the researcher is looking to activate an important period of the periods experienced by the football player during the training season, so the researcher decided to prepare various trainings for the transitional period in maintaining the level of physical and functional performance of the players of the Premier League in football.

The neglect of the transitional period in most of the Premier League teams in football and the lack of interest in it, which leads to the failure to maintain the level of performance reached by

the player at the end of the competition period and to enter the transitional phase and prepare for the next season with a clear decline in physical and functional capabilities.

As it has become a real problem experienced by (the player - the coach) on the part of the player, the preparation period is the disturbing period that accumulates the components of the training load on the player in a short period and this negatively affects the motivation of the player in reaching the competition period and he is in a state of boredom and physical and functional pressure, and on the part of the coach, it is a problem experienced by most coaches of the Premier League because the preparation period is insufficient to apply all physical, functional, skillful and linear aspects, and here the coach does not fully cover the training curriculum and is forced to enter the competition period and is not ready, and therefore the transitional period is the beginning of the establishment of the period following (preparation).

Through the researcher's practice of football as a player and as a coach, he noticed that at the beginning of the training season (the preparation period) players come after the transition period and have a clear decline in the level of physical fitness compared to their level at the end of the competition period. This is often due to the interruption of training and leaving players without a training curriculum at this stage, which leads to a sharp drop in the physical level as a result of the negative comfort granted to players during that period.

Research objectives:

1-Identifying the level of concentration of creatine phosphokines among Iraqi Premier League football players during the transitional period.

2- Identifying the level of peak and average non-oxygen capacity of Iraqi Premier League football players during the transitional period

Research hypotheses:

There are no statistically significant differences between the results of pre- and post-tests in the research variables of the control and experimental groups.

There are no statistically significant differences between the control and experimental groups in the post-tests.

Key Research Terminology

The transitional period: It is the bridge that connects the end of the competition period and the beginning of the new preparation period. It aims to get rid of the overload products during the previous period and qualify the body to accommodate the following training doses. It is the bridge

that connects two stages, which is the active rest period in which recovery is restored as a prelude to the next preparation stage.

Method:-

The experimental method is one of the most scientific methods that clearly show the features of the scientific method. (العبادي، 2015، صفحة 82) It looks for the cause and how it occurs. Experimental research is characterized as the exact scientific activity, and it is a procedure to control the influential factors surrounding the experiment. (الحديثي و ، احمد ، الربيعي، 2018) The problem of research was imposed on the researcher to use the experimental method by designing the two equivalent groups (experimental and control) with pre and post-tests, to suit the nature of the problem of research study and to achieve the objectives and hypotheses of research.

It is necessary and important to choose the sample that suits the nature of the research. The research community was chosen in a deliberate way, and they are the players of the Iraqi Premier League in football and their number is (20) clubs for the season (2022-2023). The research sample is the part that represents the community of origin, and one of the two clubs was selected as a control group and the other club was selected as an experimental group through the draw, and randomly. The research sample included (25) players from (Al-Karkh Club and Al-Hudud Sports Club) out of the total number of Iraqi Premier League clubs participating in football, as (5) players were excluded because of their lack of commitment to training and their interruption from it, and the number of players of the two groups was equally established, and they were divided into two equal control and experimental groups by (10) players for each group in a random way. The (Al-Hud Sports Club) was selected through the draw method, as in Table (1) shows the arithmetic, median, pattern, standard deviation, coefficient, tors, Comencov Sammernitz, and the level of error in measurements, anthrometer, age, training, training, structure and committees, which affect the variables of the study.

Table (1)

Variables	Unit of measurement	Arith tical mean (Maths.)	median	Mode	Standard deviation (Maths.)	Modulus of torsion = ion modulus (Mech.)	Kom enkov- mirneff test	error level
Age	Year	25.50 0	24.500	24.000	993	0.383	1460 .	0.20 0
Training Age	Year	11.80 0	11.000	10,000	876	0.502	0.18 4	.074
Height	Poison	.739	1.720	1.700	0.062	0.225	1680	.142
Block	Kilogra m	67.50 0	68	69	5.104	0.028	1390 ,	0.20 0

(N=20)

From the above table, it is clear that the coefficient of torsion was limited to (± 1), as it turns out that the level of error in the Kormankrov-Smirnov test was more than (0.05) in all research variables, which indicates the homogeneity of the study sample in age, training age, height and mass.

Table (2) shows the arithmetic media, standard deviations, the value of (t) calculated, the level of error and the significance of the differences between the two study groups in the variables under consideration in the pre-test

Variables	Unit asurement	Test group		Control group		Calculated lue	Error el	Sig
		You	Letter Ayn/	You	Letter Ayn/			
Peak Power	kg	133	0.409	- 0.063	1.184	0.177	0.862	Random
Power, n (Eng.)	kg	271	.308	6.114	0.901	0.521	0.608	Random
CK centration		311	467	297.500	.788	625	.540	Random

* Degree of freedom (10+10-2 =18).

* Moral at the error level (0.05) if the error level is less than (0.05)

From the above table, it is clear that the differences in the results of the (t) test between the experimental and control group in the tests under study are random, which indicates the randomness of the differences between the control and experimental groups at the error level (0.05) and in front of the degree of freedom (18) in the results of the pre-test, which indicates the equivalence of the two research groups in the variables under study.

Means of collecting information, tools and devices used:

Means used to collect information:

The researcher used the following means to collect information:

A. Arabic Sources and References

Tests and Measurement.

Personal interviews with experts and specialists.

observation and experiment,

Information of the International Electronic Network.

Tools & Hardware

Laptop type (toshiba).

A device for measuring mass in kg (scale), and length in square centimeters

Electronic stopwatch (1) type (flott).

Sports halls for volleyball, handball, basketball, pentathlon football, ground tennis court,

beach tennis court

Swimming pool

Volleyballs, Handball, Basketball, Football, Tennis Ground Ball, Beach Tennis Ball.

Bicycles

iPad)) Type (Appl)e Number (1).

Whistle

Monark stationary bicycle.

Research Procedures:

Identification of research variables and selection of their tests:

In light of the references and scientific sources in sports training, football, sports physiology, and the opinion of the supervisors, the Seminar Committee, and the Scientific Committee, the research variables that are appropriate for the research sample were determined as follows:

Measure the concentration level of the enzyme phosphokines (ck ase.

Apex anoxia.

Power, mean (Eng.)

Research variables:

The pinnacle of power.

Power, mean (Eng.)

Test Name: 30-second Wingate Test (adnan, lsmadi, ismail, & norasrudin, 2014, pp. 483-484)

Purpose of the test: Measure anaerobic capacity by performing as much work as possible for 30 seconds.

Equipment required: Monarch bicycle and accessories, computer.

Procedures: After taking the length and weight of the laboratory, its data is entered into the test program in the computer, and the resistance is determined according to the weight of the laboratory, which is (75 g) per kilogram of the weight of the laboratory, and the bike seat is adjusted so that there is a very light bend angle at the knee joint up to (10) degrees, then the foot belt is adjusted and fixed. A resistance of (1-2 kg) is placed relative to the weight of the laboratory to perform the warm-up for a period of (3) minutes, then the test procedures are explained with an alert on the announcement of the moment of commencement, and to ensure that before the test is conducted, the laboratory performs at maximum speed for a period of (3-5) seconds and repeats this two or three times, and the rotation indicator (rpm) is turned on to follow the rotation speed of the wheel since the start of the measurement.

The load is lifted gently from the weight basket and the laboratory begins to move the wheel at the maximum possible speed (not less than 80 rpm) for a period not exceeding (3) seconds, then the weight is lowered with the distance measurement run from the keyboard to start the measurement process, and the performance continues for (30) seconds at maximum speed and without stopping and the laboratory is encouraged to maintain the rotational speed, and the calming must be performed after the completion of the test.

Registration: During this test, the maximum anaerobic capacity is calculated.

Measuring the level of creatine phosphokines cpk asc:

Objective of the test: To know the percentage of the enzyme phosphokines after physical v

exertion.

Tools: (cotton, needle drill, area disinfectant, and small tubes for blood sample transfusion).

Procedures: A specialist (analyst) was hired not to take blood samples from the testers.

Pre-test

The pre-test was carried out on the research sample of (20) players on 5 and 6/8/2023. The first included the speed tolerance test (35) m , and the second day the fatigue index test was carried out on the stationary bike device (monark)

Key Experience:

The researcher prepared various trainings with the aim of maintaining the level of performance (speed tolerance and fatigue index) for the players of the Premier League in football for the experimental group of the (Border) Sports Club. The number of these trainings is (18) and a training unit of (3) training units in the first two weeks. The remaining three weeks are (4) training units per week by (5) weeks, provided that the player's pulse rate does not exceed 75%. The method of play was used. "The training load is characterized by ripple and not at a single pace. Thus, it is considered one of the foundations of upgrading the components of the training load. The researcher (فاخر و علي ، 2010، صفحة 60) also adopted the distribution of intensity in the light of the weeks in a ripple method. Rest was determined by relying (المدامغة ، 2008) on scientific sources. The researcher gave these trainings systematically and strongly and specific repetitions and rest periods commensurate with the intensity. As for the control group, it is subject to the team coach's approach only.

As for the post-tests, they were carried out in the conditions of the pre-tests themselves and over the course of days 16 and 17/9/2023

Statistical methods used:

The researcher used the statistical bag (SPSS) and some statistical laws to extract statistical results. - Ha! - Ground rules...

(Arithmetic mean, mean, standard deviation, torsion coefficient, T test for non-independent samples, T test for independent samples, retention ratio law, Komnenkopf-Smirnoff law).

Present, analyze and discuss the results of the functional variables of the experimental and control groups.

Presentation, analysis and discussion of the results of the difference of the arithmetic media, standard deviations, test (C) and the percentage change between the results of the pre and post tests of the average power variable of the experimental and control groups.

Table (3) shows the arithmetic media and standard deviations of the average ability variable in the pre and post-tests of the experimental and control research groups

Variables	Unit Measurement	Pre-test				Post-test			
		Control group		Test group		Control group		Test group	
		You	□ P	You	□ P	You	□ P	You	□ P
Peak Power	Kg	- 0.063	1.184	133	0.409	108	1.395	618	0.997
Power, mean (Eng.)	Kg	6.114	0.901	271	.308	0.544	0.738	.538	648
CK concentration		297.500	.788	311	467	261	.559	.280	661

Table (4) shows the difference of the computational media, its standard deviation, the value of (t) calculated, the significance of the differences, and the percentage change between the results of the pre and post tests of the average power variable of the experimental group

Variables	U of Measurement	F	BRB.	t- Calculated	error level	Sig nificance of differences	Change
Peak Power	K	485	0.943	1 626	0.1	Ran dom	-963
Power, mean (g.)	K	267	0.493	711	.12	Ran dom	258
CK concentration		300	-0.52 **	1.005	.34	Ran dom	038

* Degree of freedom (10-1=9).

* Moral at the error level (0.05) if the error level is less than (0.05)

Table (5) shows the difference of the arithmetic media, its standard deviation, the value of (t) calculated, the significance of the differences, and the percentage change between the results of the pre and post tests of the average power variable of the control group

Variables	U of measure nt	F	BRB	t- Calc ed	err level	Sig cance ances	Chan
Peak Power	kg	0.955	1.21	2.49	0.0	cor ate	844
Power, mean (Eng.)	kg	0.570	.713	.528	–0.	cor ate	9.323
CK concentration		35.70	769	1.49	0.1	Ra m	12,00

* Degree of freedom (10-1=9).

* Moral at the error level (0.05) if the error level is less than (0.05)

Presentation, analysis and discussion of the results of the difference of the arithmetic media, standard deviations, test (C) and the percentage change between the results of the pre and post tests of the average power variable of the experimental and control groups.

Table (6) shows the arithmetic media, standard deviations, the value of (t) calculated, the level of error and the significance of the differences between the two research groups of the average power variable under consideration in the results of the post-test

Variables	Unit asurement	Test group		Control group		Calculated lue	LineA el	Sig
		You	Letter Ayn/	You	Letter Ayn/			
Peak ver	Kg	618	0.997	108	1.395	784	012	corporate
Power, n (Eng.)	Kg	.538	648	0.544	0.738	3.201	0.005	corporate

CK centration		.280	661	261	.559	.488	0.632	corporate
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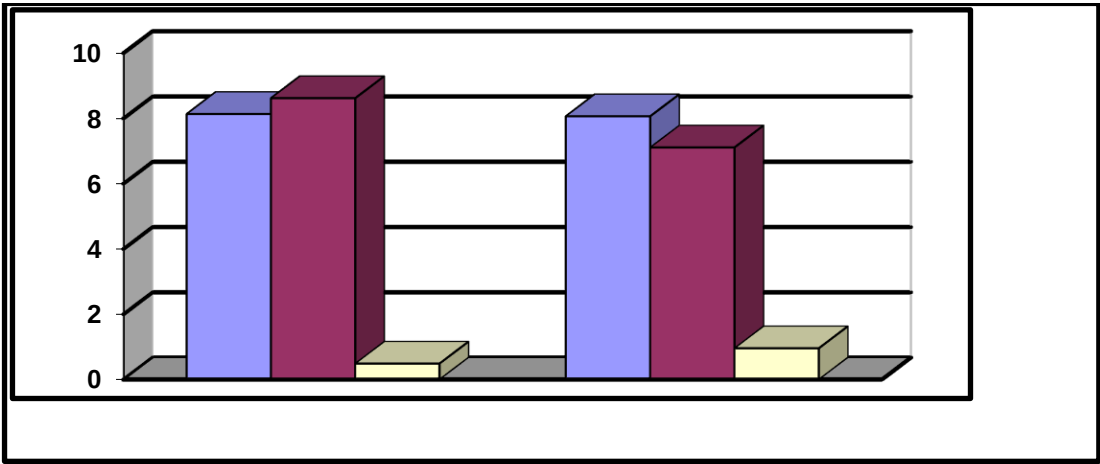


Figure (1) shows the computational media and the difference of the computational media between the results of the pre and post tests of the experimental and control groups in the power crest variable

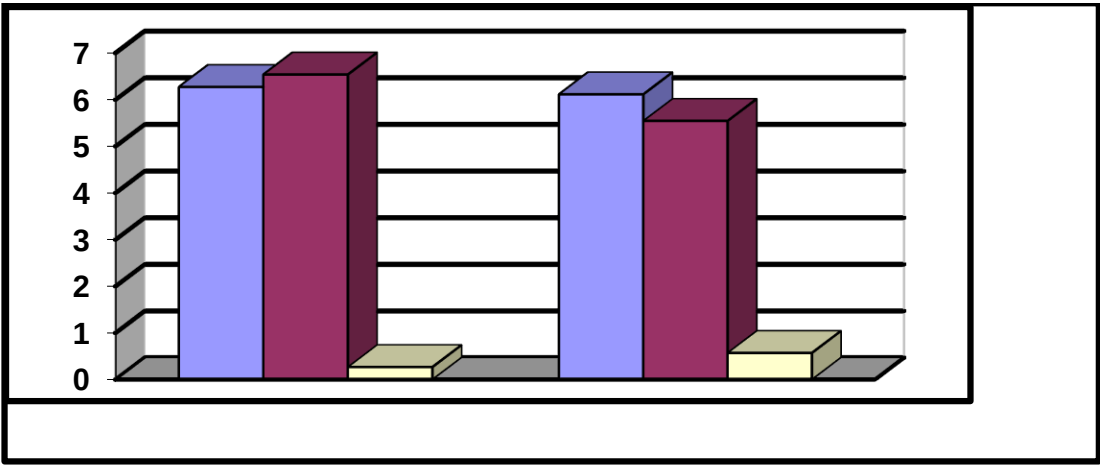


Figure (2) shows the computational media and the difference of the computational media between the results of the pre and post tests of the experimental and control groups in the average ability variable

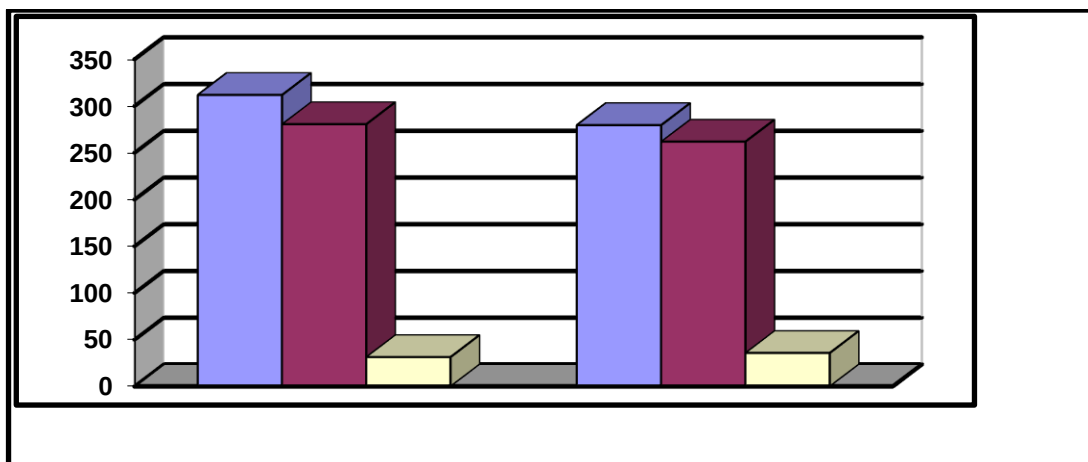


Figure (3) shows the computational media and the difference of the computational media between the results of the pre and post tests of the experimental and control groups in the CK concentration variable

Discussion of Functional Test Results:

In light of the previous presentation of the results reached by the researcher and in light of the objectives and hypotheses of the research and guided by the results of previous studies and what was stated in the scientific references, these results were discussed as follows:

Peak Power

We see through Table (4) that there is a difference in the value of (T) calculated and (percentage change) for each of the research tests (pre-post) in favor of the pre-test for physical tests. In the test (peak ability) of the experimental group, the value of (T) calculated was (1.626) (percentage change) (5.963), while in Table (5), the value of (T) in the control group was (2.492) and (percentage change) (11.844).

From the above results, it is clear that there are statistically significant differences between the pre- and post-measures of the experimental group in favor of the pre-measurement in the test (Ability Summit), which indicates that the proposed curriculum for the various exercises contributed to relatively maintaining the level of (Ability Summit), which contained different exercises and activities that are characterized by the element of suspense and fun, such as competitive small games, swimming exercises, water games, football, basketball, volleyball, earth tennis, gym, bicycles, and football tennis. All the various games or exercises that were used during this period were characterized in some of their joints by maximum rapid work, whether in basketball, swimming or other games that require deoxygenation work during specific times due to the link between their skills and deoxygenation work. All the various exercises led to the maintenance of a certain level of variables (physical, functional and biochemical), and that the exercises developed by the researcher were effective in maintaining the functional capabilities under

research, which the researcher took into account when developing the scientific foundations, which had a significant impact on maintaining a certain level of the (peak ability) test in the experimental group, and the researcher attributes the reason There are significant differences in the anoxic phosphagenetic ability between the two study groups and in favor of the (experimental) group. The development of this ability depends mainly on the use of high-intensity exercises and short distances. As fox stated, "Anaerobic ability begins to be used when the intensity is about(80%) of the maximum ability of the player. In order for the coach to be sure of the almost total dependence on anaerobic ability, it is appropriate to train with 90% of the ability of the player" (), In addition to the rest periods set according to a correct scientific basis based on the body's ability to take a sufficient rest period to restore phosphagene energy compounds quickly, whether those between repetitions and between groups and between exercises, as "phosphaginins, especially(ATP), recover very quickly within 30 seconds after stopping work, which led to an increase in the activity of enzymes responsible for restoring the formation of (ATP), which is the enzyme (ATp ase) and creatine phosphokines (CPK). The activity of these enzymes increases (10-15%)." Phosphaginins, especially (ATP), are restored by (70%) in 30 seconds, which is completed in several minutes, all of this It indicates that the exercises and the rest times used have a great impact in restoring the formation of phosphagene energy compounds, as they represent one of the main energy systems in the game of football. The skills and requirements of this game are of an extreme and rapid nature, such as fast running with the ball, jumping and scoring on goal, which worked to maintain a certain level of phosphagene deoxygenation ability of the experimental group, while the results of the control group were a clear loss of this ability due to negative rest and non-performance of the training of the transition period, contrary to what was stated in the sources and studies that preceded the importance of training during the transition period. Abu Al-Ela Abdel Fattah points out that if the player stopped training for a month, he begins to lose what he gained from anaerobic tolerance(عبدالفتاح، 2000، صفحة 227), and as a result of stopping or not training, only (Fox) mentioned that there is a clear decrease in the level of physiological work ability and physical performance of athletes. When athletes start to resume training as planned, their bodies use protein to build and repair damaged tissues by not using the body (protein), which leads to the body increasing the process of dissolution (protein). The body begins to disrupt the utilization of some of the benefits obtained during training and begins (protein), increasing the process of protein decomposition (regeneration) (FOX و Etal، 2000).

It is also mentioned that the shortage in the cross-sectional area of the muscle fiber becomes apparent after several weeks of stopping the performance of any physical activity. These changes result from the disruption of the work of (protein) and a decrease in the pattern of recruitment of motor units of the working muscles (م. المدامغة، 2017، صفحة 453).

The researcher believes that if the trainers could not remove the fatigue and training pressures resulting from the intense training and participation from the many and stressful races of the previous season and determine, and compensate the negative elements of these pressures appropriately, through exercises or a training curriculum during the transitional period, then athletes can show those negative elements again throughout the training period of the new preparatory period, (the following).

Power, mean (Eng.)

We see through Table (4) that there is a difference in the value of (T) calculated and (percentage change) for each of the research tests (pre-post) in favor of the pre-test for physical tests. In the (average ability) test of the experimental group, the value of (T) calculated was (1.711 and (percentage change) (4.258), while in Table (5) the value of (T) in the control group was (2.528) and (percentage change) (9.323).

It is clear from the above results that there are statistically significant differences between the pre- and post-measures of the experimental group in favor of the pre-measurement in the test (average ability), which indicates that the proposed curriculum for the various exercises contributed to preservation and this is clearly shown by the average ability index and its reflection on this indicator, which contained various exercises and activities characterized by the element of suspense and pleasure such as competitive small games, swimming exercises, water games, football, basketball, volleyball, ground tennis, gymnasium, bicycles and football tennis. All the various exercises led to average ability, and that the exercises developed by the researcher were effective in maintaining the physical abilities under research, which took into account the researcher when developing the scientific foundations, which had a great impact on maintaining the average ability level of the experimental group. Muhammad Rida Ibrahim Al-Madamgha states that the sudden transition from arduous (severe) training to a state of complete negative rest can be harmful to the members and organs of functional athletes, causing athletes to suffer from insomnia, loss of appetite for food, and finally swelling in the digestive system. Athletes can get rid of these cases if they resume training within a short period of time, because these cases are not serious symptoms. However, if training is stopped for a long period of time, these symptoms can appear in athletes for some time, indicating the inability of the bodies and devices of these athletes to adapt to the state of inactivity or inactivity (المدامغة، 2017، صفحة 452), and this is consistent with what was stated in a study (Bomba, 2000). As for the time required for the incubation cycle, these symptoms will vary from one athlete to another, but in general they can appear after (2) or (3) weeks of non-performance of any activity or lack of training. Lack of training makes athletes exposed to the symptoms of stoppages or lack of training (Bompa, 2000).

The researcher believes that negative rest in the alternative can also prevent athletes from being unable to start a new training year from a higher level than the previous year because starting at a higher level is a very important requirement if the achievement requires it to improve from year to year continuously.

CK concentration

We see through Table (4) that there is a difference in the value of (T) and (percentage change) for each of the research tests (pre-post) in favor of the pre-test for physical tests. In the test ((ck of the experimental group), the value of (T) was (1.005) and (percentage change) was (10.038), while in Table (5), the value of (T) in the control group was (1.490) and (percentage change) was (12.000).

It is clear from the above results that there are statistically significant differences between the pre- and post-measures of the control and experimental study groups in favor of pre-measurement in the test (CK enzyme concentration), which indicates that the proposed curriculum for the various exercises contributed to maintaining a relatively high level of speed tolerance, which contained different exercises and activities, which are characterized by an element of suspense and pleasure such as competitive small games, swimming exercises, water games, football, basketball, volleyball, ground tennis, gymnasium, bicycles and football tennis. All the various exercises led to the fatigue index, and that the exercises developed by the researcher were effective in maintaining the physical abilities under research, which the researcher took into account when developing the scientific foundations, which had a great impact on the stability of the level of the fatigue index of the experimental group. Jabbar Al-Kaabi points out that the chemical energy released from the incomplete decomposition of glucose does not transfer directly to ATP, but rather to creatine reconstructing creatine phosphate, which in turn transfers to ATP. (الكعبي، 2007، صفحة 230) This confirms what was stated in the results of the study that the enzyme creatine phosphokines is exposed to a clear decline when neglecting the exercises during the transitional period, as it was shown in the results of the tests of the control group that what was in the experimental group was maintained at a certain level of decline, as the various exercises affected the relative preservation of the level of the enzyme (CK), and the training curriculum played an effective role in maintaining the level of functional capabilities.

As Al-Madagha points out, the transitional period represents a link between two annual training courses, and its main objectives are to facilitate the task of reaching psychological comfort, mental and muscular relaxation, and restoring recovery from functional body shake, as well as maintaining athletes at an acceptable level of general physical preparation. (م المدامغة، 2017، صفحة 451)

Discussion of the results of the functional tests of the post-test:

It is clear from Table (6) that there are statistically significant differences in the results of the (post) measurement test for the two research groups in the functional variables under research in the tests (creatine phosphokines enzyme concentration, peak ability -average ability), where the value of (t) calculated for the two research groups ranged from (0.488), (2.784), (3.201), which indicates that the interruption in training during the transitional period led to a significant decrease in the level of functional variables.

(This is what Owais Al-Jabali, 2001, p. 263) pointed out that the player who performs during the transition period an activity will find an improvement in the physiological characteristics to start a good preparation phase. Either moving or changing from a hard load to a full rest negatively affects the organization of vital processes and that complete rest can be a reason for the player's inability to start a new training course at a high level (الجبالي، 2001، صفحة 263).

The researcher attributes the reason for this decrease to the conduct of players in this transitional period (exercises contrary to sports effectiveness, most of which are non-specialized by the type of game or activity practiced by the player must be away from his game, and this is confirmed by Zuhair Al-Khashab, which is indispensable in the previous stage and in the training

stage, general exercises are conducted significantly and always that the actual rest phase consists of the transitional period and this must be conducted exercises that are not of a special nature) (الخشاب، 2000، صفحة 91).

The researcher believes that the transition period is very important in the career of every athlete and must be adhered to scientifically and thoughtfully because any gap or shortage in this transition period will negatively affect the periods following this period such as the preparation period and the competition period).

FINDINGS:

In light of the objectives and nature of this study and within the limits of the research sample and the methodology used, and based on the data collected by the researcher and the results of the statistical analysis, the researcher reached the following conclusions:

The various exercises used during the positive rest period contributed to the preservation of the level of (creatine phosphokines enzyme, peak and average capacity) during the transition period of the experimental group.

The interruption of training for the control group during the transitional period contributed significantly to the change in the level (creatine phosphokines enzyme, peak and average capacity) during the transitional period of the control group.

The use of exercises or non-activity practiced has a role in maintaining the average ability as well as its role in recovery.

Recommendations:

Within the limits of the procedures involved in the study and its results, the researcher recommends the following:

Apply the proposed training curriculum using (miscellaneous training) during the positive rest period to the youth and youth category in football to maintain (creatine phosphokines enzyme, peak and average ability).

The need to develop a training curriculum during the transitional period to maintain the relative physical and functional level reached by the players.

The need not to interrupt training during the transitional period, which has negative effects on football players.

The trained trainers must know the landing levels of their players in order to provide training curricula commensurate with the landing level of the players.

The stress rates used during the training of the transitional period should be of medium intensity in order to contribute to the recovery of athletes and contribute to maintaining the physical and functional level of players relatively

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The Effect of Competitive Exercises Using Physical Performance Tracking Technology (GPS Player Tek Plus and Polar H9) on Developing Speed in Iraqi Premier League Football Players

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Abstract

Football is one of the most important team sports, played by men and women, young and old, across all age groups. The physical development in this sport is attributed to athletic training and modern technology, which have greatly contributed to the advancement of sports in general. The competitive nature of football requires precise and rapid physical skills to achieve outstanding performance. Speed is a fundamental element in football, making the use of devices such as heart rate monitors and GPS tracking systems essential during training and matches.

The aim of this research is to enhance the performance of Al-Talaba Sports Club players in Baghdad by scientifically improving their speed. The significance of the study lies in creating competitive exercises based on scientific data using global tracking technologies to improve performance during training.

According to the research study, there is a physical weakness in the players' speed, which makes the use of the GPS Playertek Plus tracking device necessary to develop their speed. The research contributes to data analysis, designing competitive exercises, and improving match performance. The study highlights that players' speed development is significantly influenced by competitive drills that utilize GPS tracking device readings, emphasizing the importance of integrating this technology into sports training. GPS tracking devices help improve team speed both collectively and individually.

Keywords: Speed, fitness, Polar H9, Playertek Plus.

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Introduction

Training objectives and game requirements are frequently the basis for the development of training techniques. Football is a competitive team sport, and as such, physical training must be tailored to the speed and precision needed to perform in a real match with the ball present and competitive components, whether the performance is individual or team-based. The researcher noticed physical weakness in the players' movements during specific parts of the game and in their ability to finish assaults with goals, based on the first author's expertise as a coach at Al-Student Club in Baghdad and as a former player in clubs and national teams. The most significant factor contributing to this deficiency is the disregard for high-speed training surpassing 25.5 km/h. The GPS monitoring gadget, which tracks speed during physical exercise, may be used to determine this speed. Utilising Catapult's direct tracking device, the GPS Playertek Plus, which is compatible with the developments in communication networks like 4G and 5G networks, the researcher offers a methodical answer to this issue.(Maab Fathi, et al., 2022) This gadget allows for real-time monitoring and measurement of the high speeds required in football by tracking players' performance throughout practices and games. Coaches may boost players' speed through customised competitive training programs according to this scientific method, which also improves the quality of accessible data, speeds up performance analysis, and improves team performance in games.

The Research's importance:

The development of competitive activities to improve the pace of players at Al-Talaba Sports Club in the Iraqi Premier League in Baghdad is the significance of this research. Using worldwide monitoring technologies like Catapult's Playertek Plus devices, this development will be conducted in a methodical and scientific way. These technologies are intended to enhance players' speed capabilities during practice and competition. They are necessary for precise performance analysis and the development of training plans grounded in empirical evidence. Players' physical prowess and training efficacy will both be enhanced by this strategy, which will boost their performance in games and assist their team win.

Research Objectives

In order to improve football players' speed, the Al-Talaba Sports Club in Baghdad will use the GPS Playertek Plus monitoring gadget to create competitive activities for the 2022–2023 season.

To find out how these particular activities, which use the GPS Playertek Plus monitoring device, affect the football players of the Iraqi Premier League's Al-Talaba Sports Club in Baghdad's ability to improve speed.

Research Scope:

Human Scope: Players of Al-Talaba Sports Club for the 2022-2023 season in the Iraqi Premier League in Baghdad.

Time Scope: The period from October 16, 2022, to December 31, 2023.

Spatial Scope: The training field of Al-Talaba Sports Club at the University of Baghdad, Jadriyah.

Terms:

GPS Playertek Plus: An advanced sports performance tracking device used in various sports, including team sports like football. The device records physical data related to player movements during training sessions and matches using Global Positioning System (GPS) technology. It allows coaches to monitor physical performance accurately, such as distance covered, speed, acceleration, deceleration, and other important metrics. The device provides real-time and detailed data that aids in performance improvement and training strategy development. By analyzing this data, coaches can identify strengths and weaknesses and create customized training programs to enhance the athletic performance of teams or individuals, as shown in Appendix (1).

Polar H9: A fitness tracker that measures physical activity and heart rate, used in various sports and fitness activities. It is known for its high accuracy in monitoring heart rate, providing precise data about physical performance, training intensity, and calories burned during exercises and daily activities. It operates using Bluetooth technology, connecting with compatible smartphones or tablets. By utilizing the heart rate data provided by the Polar H9, coaches can analyze physical performance and adjust training sessions to improve speed, helping athletes enhance their fitness level and achieve their athletic goals, as shown in Appendix (1).

Previous Studies Study by Karrar Ali Karim (2023): A Master's thesis titled "An Analytical Study to Evaluate Physical Condition Using Information Technology for Players of Al-Talaba Club in the Iraqi Premier League." The aim of the thesis was to evaluate the physical condition of Al-Talaba players using information technology in the Iraqi Premier League. The research used a descriptive survey method and employed the (PLAYERTEKTEAM) device. The researcher found that the readings from the GPS device were positively or negatively dependent on the playing style of Al-Talaba Club compared to other teams, depending on the levels of those teams. The researcher recommended emphasizing the use of the (PLAYERTEKTEAM) device for measuring the physical condition of football players, as was done in this study, and suggested that it be used by other teams in the Iraqi league that have not yet adopted it. The researcher also recommended incorporating lectures on how to use this device into the courses of the Asian Football Confederation's coaching programs.

Study by Amir Haider Hussein (2018): A study titled "Using GPS Recorder and Polar H10 Devices to Analyze Some Physiological and Physical Indicators and Compare Them Between Playing Positions for Players in the Iraqi Premier League." The goal of the study was to examine the specificities of each

playing position in football using electronic devices that measure various physical variables and heart rates. The research employed a descriptive approach and found varying results in heart rate, distance covered, speed, and other physical variables measured by the (GPS Recorder) and (Polar H10) devices. The researcher recommended the use of modern electronic devices in regulating training load and assessing the physical and physiological capabilities of players in the Iraqi Premier League.

Study by John R. Evans, Michael J. Smith, et al. (2021): A study titled "Impact of GPS Technology on Sprinting Performance in Youth Soccer Players." The purpose of this study was to investigate whether GPS technology could help youth football players improve their sprinting performance. The results showed that the use of GPS monitoring devices significantly contributed to increasing maximum speed and the distance covered at high speeds, thereby improving the performance of young players in both training and competition (John R, et al., 2021). Study by Lucas A. Johnson, Emily K. Rogers, et al. (2020):

Titled "The Effectiveness of GPS-Based Training Interventions on Speed and Endurance in Young Soccer Players." This study explores how GPS-based training can enhance the speed and endurance of youth football players. The research indicates that using GPS technology in training systems significantly improves athletes' speed and endurance during both training sessions and competitions. (Johnson , et al., 2020) Study by Sarah L. Thompson, Mark D. Wilson, et al. (2019):Titled "Enhancing Sprint Performance in Youth Football: The Role of GPS Monitoring." This study discusses how GPS monitoring can improve sprinting performance in youth football players. The results show that GPS technology helps determine the appropriate training intensity, leading to improved maximum speed and overall physical performance in young players (Thompson, et al., 2019)Study by Rachel M. Davis, Christopher P. Lee, et al. (2022):Titled "GPS Technology and Sprint Speed Development in Adolescent Soccer Players." The purpose of this study was to examine how GPS technology impacts the development of sprint speed in adolescent football players. The findings indicate that using GPS to track training improves maximum speed and the distance covered at high speeds, benefiting the physical performance of young athletes (Davis R.M., et al., 2022)Study by Rampinini et al. (2015):This study discusses the accuracy of GPS devices in measuring high-intensity running in team sports players, such as football, and proves their effectiveness in analyzing physical performance and accurately measuring distances covered during sports activities (Rampinini E., et al., 2015)Study by Scott et al. (2016):This study provides a review of the accuracy and reliability of GPS systems in team sports, focusing specifically on analyzing speed and distances covered. It emphasizes the importance of this technology in enhancing athletic performance. (M.T., et al., 2016)Study by Carling et al. (2008): This study explores the use of movement analysis technologies, such as GPS, to analyze physical work in football. It demonstrates how these technologies contribute to performance improvement by measuring players' work rates and physical effort (Carling C., et al., 2008)

Method and tools

First: Research methodology, research community and sample:

The researcher used the experimental method, and the research population was defined as the players of Al-Talaba Sports Club, with a total of 30 players. After excluding goalkeepers and injured players, who numbered 5, the sample size became 25 players. Additionally, 5 players were selected for a pilot study from the original population of 410 players, representing 4.9% of the total population. The players were randomly divided into two groups: the experimental group and the control group, using a random draw method based on odd and even numbers. The experimental group consisted of 10 players, and the control group also included 10 players. The two groups were balanced, as shown in Table 1.

Table (1): Shows the Equivalence of the Experimental and Control Groups in the Pre-Test of the Speed Indicator

Variable	Unit of Measurement	Experimental Group		Control Group		Calculated T Value	Error Level	Significance
30m Speed Test	Seconds	Mean	SD	Mean	SD	0.471	0.643	Not Significant
		4.538	0.519	4.662	0.651			

Second: Search test: 30m speed test

- Test Name: 30-Meter Sprint Test from a High Start (Al-Jamili, et al., 2023)
- Objective of the Test: To measure transitional speed.
- Equipment: Stopwatch, whistle, adhesive tape to mark two parallel lines 30 meters apart (with the first line as the starting line and the second line as the finish line), and a results recording sheet.
- Test Procedure: The participant starts behind the starting line in a high starting position. Upon hearing the whistle, the participant sprints at their maximum speed until crossing the finish line.
- Performance Conditions: The test can be performed individually or with multiple players to ensure the presence of a competitive factor.
- Recording Method: The participant is allowed only one attempt. The time taken to cover the distance from the starting line to the finish line is recorded.

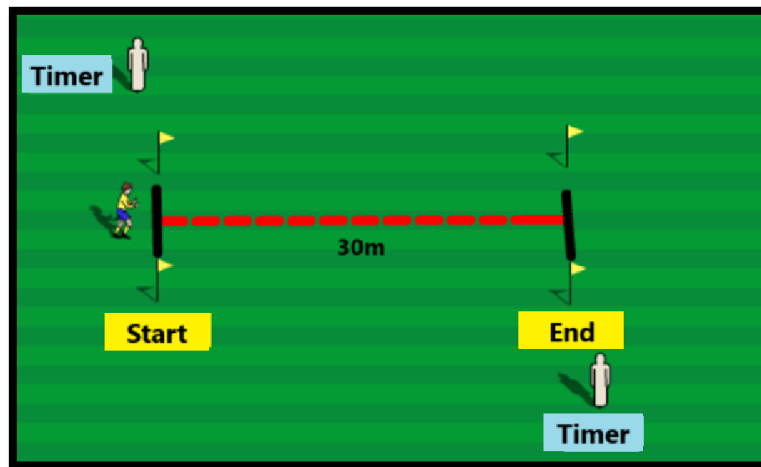


Figure (1): Speed test

Third: The Pilot Study

The research team, under the supervision of the researcher, conducted a pilot study on 16/10/2022 at 10:00 AM with 5 players from the research sample, Al-Talaba Sports Club. The following observations were made:

- The suitability of the transitional speed test and its ease of application to measure the time taken to complete the test.
- The suitability of the competitive exercises and the evaluation of the efficiency of the assistant team or working team.

Fourth: Pre-Test

The pre-tests were conducted on the research sample with the assistance of the support team, under the supervision of the researcher, at 3:00 PM on Sunday, 16/10/2022. The speed test was performed for both the control and experimental groups on the same day at the Jadriya campus of the University of Baghdad.

Fifth: The Main Experiment

The researcher prepared the training units for the main experiment, starting on Sunday, 23/10/2022, and ending on Saturday, 18/12/2022. The training sessions were held on Saturdays, Tuesdays, and Thursdays, with 3 sessions per week, totaling 24 training units over two months during the specific preparation phase.

The researcher focused on the skill and tactical aspects of the main section, and after determining the time for the main section of the physical aspect, the researcher used the interval training method, as it is more suitable for the needs of the players.

The competitive speed exercises were applied to the experimental group during the specific preparation phase.

The researcher relied on the Polar H9 device to determine training intensity. The interval training method was used in the speed training units, with the intensity of the training units being between 98%-100% of the player's maximum intensity.

- Intensity of the first month: 98%
- Intensity of the second month: 100%
- Overall total intensity: 99.83%

The researcher distributed the training load components by determining the intensity based on the players' maximum capabilities using the Playertek Plus and Polar H9 devices.

Rest periods were calculated based on heart rate data from the Playertek Plus and Polar H9 devices to determine the appropriate recovery times.

The researcher used repetition to determine the volume of the exercises.

Sixth: Post-Test

The post-test was conducted on the research sample with the assistance of the support team at 3:00 PM on Wednesday, 21/12/2022. The speed test was performed for both the control and experimental groups on the same day at the Jadriya campus of the University of Baghdad.

Seventh: Statistical Methods

The researcher used statistical methods from the SPSS software to extract the statistical results.

Results and Discussion

First: Presentation of the Pre-Test and Post-Test Results for the Experimental and Control Groups:

Table (2): Shows the means and standard deviations for the pre-test and post-test speed indicators for both the experimental and control groups.

Variables	Unit of Measurement	Pre-Test		Post-Test	
		Mean	Standard Deviation (SD)	Mean	Standard Deviation (SD)
Control Group	Seconds	4.662	0.6513	4.544	0.5713
Experimental Group	Seconds	4.546	0.5303	4.123	0.0697

Second: Presentation of the Differences Between Pre-Test and Post-Test Results for Speed in the Control Group:

Table (3): Shows the difference in means, standard deviations, the calculated t-value, and the significance of the differences between the pre-test and post-test results for the speed indicator in the control group.

Variab les	Unit of Measure ment	Group	Mean	Standard Deviation (S)	Mean difference (F - S)	-Value	Error Level	Significance of Differences
Speed	Seconds	Control	0.118	0.1606	0.0508	2.322	0.045	Significant
		Experimental	0.415	0.5182	0.1675	2.524	0.033	Significant

Third: Discussion of Pre-Test and Post-Test Results for Speed in the Experimental and Control Groups:

Using the t-test, a significant effect on speed was observed between the pre-test and post-test results, favoring the post-test in the experimental group, as shown in Table 3. The researcher attributes these results to the effectiveness of the competitive exercises organized based on GPS tracker readings, whether the exercises were with or without a ball. These exercises were carefully structured in terms of intensity, rest, and repetitions. This approach helped achieve a balance between external and internal training loads, which requires a high neuromuscular response in a short period, as confirmed by Qassem et al. (2011), who stated: "The extent of the neural response and its compatibility with the muscular response for performing movements in the shortest possible time is an important and essential factor for motor performance" (Qassem et al., 2011).

By using Polar H9 devices and GPS trackers, information was provided that helped improve speed in a competitive framework. This improvement was achieved through increased rapid movements of the team when transitioning from defense to attack and vice versa. The competitive atmosphere during exercises and the application of defensive duties such as intercepting the ball and monitoring opposing players played a significant role in executing quick counterattacks and scoring goals. These combined factors served as an important motivation for the players, encouraging them to perform exercises correctly and quickly with increasing intensity.

Using GPS tracking devices and adopting a varied approach in training units contributed to improving physical fitness, including increasing speed. The gradual increase in training intensity was emphasized by Fadhil Kamil Midhkor and Amer Fakher, who stated: "In order to progress in a training program, exercises should be made more difficult as the program advances to maintain and challenge the body's adaptation and achieve progress" (Midhkor et al., 2008). This was also confirmed by Basatousi (1999), who highlighted that "training at high intensities is one of the fundamental methods for improving physical abilities by achieving adaptation between work and rest intervals." Additionally, Mohamed Reda Ibrahim and Mahdi Kazem Ali stated, "Introducing diverse exercises in training programs in a precise manner helps maintain athletes' desire to perform hard training requirements and transforms them from boredom into a state of joy and pleasure during training" (Ibrahim et al., 2013).

The GPS tracker measures the speed at which the player moves during training or matches. Running speeds above 25 km/h, in straight or diagonal runs across the field while performing movements in the shortest time possible, are defined as speed. As confirmed by Adel Turki and Salam Sahib Jabar, "speed in football refers to the player's ability to move and transition with maximum possible speed from one place to another, either in tight spaces with or without an opponent, and moving in straight, lateral, longitudinal, or diagonal directions with short, controlled, and close steps, especially with the ball and its control" (Turki et al., 2016). This is also affirmed by Qassem et al. (2011), who defined speed as "the extent of the neural response and its compatibility with the muscular response for performing movements in the shortest possible time" (Qassem et al., 2011). Additionally, Anderson (2004) defined speed as "the ability to move a player's body mass in the shortest time possible from one point to another" (Marcia K. Anderson, et al., 2004). Haitham Jawad (2019) further emphasized the importance of speed in football, stating: "Speed in football is the transition of the player from one point to another on the field with maximum speed and minimal time, with or without an opponent, the ball, or both" (Haitham Jawad, 2019).

This confirms the importance of speed in modern football, and there is no place for slow players, as Abdullah Hussein Al-Lami emphasized: "There is no place for slow players in any team today in the context of modern playing styles" (Al-Lami, 2012).

Table (4): Presentation of Post-Test Results for Speed Index and Discussion

Variable	Unit of Measurement	Experimental Group		Control Group		Calculated T Value	Error Level	Significance
		Mean	SD	Mean	SD			
30m Speed Test	Seconds	4.123	0.0697	4.544	0.517	2.313	0.033	Significant

Fourth: Discussion of the Results Between the Experimental and Control Groups in the Post-Test for Speed Index

Based on the results of the speed test presented in Table (4), a significant effect on speed was observed between the control and experimental groups, favoring the experimental group. There was a notable improvement in speed for the experimental group in both pre-test and post-test, which can be attributed to the use of the GPS device and Polar H9 during the competitive training sessions. The absence of any effect from the variation in competitive drills with the devices during the training session contributed to the improvement in the experimental group's results.

The researcher attributes this improvement to the structured training program, which helped in enhancing speed. The use of the GPS device and Polar H9 during training sessions allowed for a gradual increase in training load by adjusting the difficulty of the drills, starting from easy to hard, as confirmed by Mufte Ibrahim (2009) who stated: "If the difficulty of the drill is increased within the same training session, it should follow a progression from easy to hard, from the known to the unknown."

Additionally, the researcher believes the progress in speed training is due to the gradual increase in training load, including intensity, volume, rest, and the components of the competitive drills. This progression ensures that athletes perform the required training within their functional capabilities at the beginning of each new training phase to achieve new adaptations and raise their performance to the highest possible level, as noted by Mohammed Reda Ibrahim (2013).

The researcher also attributes the development of the experimental group's performance to the type of competitive drills, which allowed the players to execute tasks such as quick movements for dribbling, passing, and shooting on goal, and transitioning from defense to attack quickly when in possession of the ball. The competitive nature of the training kept the players motivated, reducing boredom and monotony, as noted by Basal Abdul Mahdi (2008), who emphasized the importance of variation in drills to maintain athlete engagement.

The effectiveness of varied competitive drills was also affirmed by Mohammed Reda Ibrahim and Mahdi Kazem Ali (2013), who stated that "introducing diverse drills into training programs is crucial to maintain the athlete's desire to engage in strenuous training, turning frustration into joy and enjoyment during training."

Moreover, the researcher points out that the gradual progression of training loads is essential to keep challenging the athlete's body, leading to improvements in performance, as noted by Fadel Kamil Mazzour and Amer Fakher (2008). Properly structured training, with accurate timing for intensity, rest, and repetitions, ensured that external training loads aligned with the internal load of the athletes, enhancing speed performance in competitive conditions. The absence of competition during drills could lead to a lack of proper repetition execution, as mentioned by Haitham Jawad (2015).

In modern football, players are expected to demonstrate speed across the field, whether it is pressuring opponents, sprinting for support, or escaping defenders to score, as affirmed by Thamer Mohsen and Mufid Majed Mulla (1999), who emphasized that "these important drills develop key principles in football, such as pressing, supporting, escaping from opponents, and intercepting."

The researcher confirms that the athletes reached their maximum speed during official matches and competitive drills, as shown on the GPS device, which demonstrated the development of the players' transition speed. This aligns with the findings of Jmeili and Alawani (2023), who stated that "the athlete's ability to perform various repetitive transitional movements, covering specific distances in the shortest possible time, is crucial" (Jmeili, et al., 2023).

The GPS device measures the total speed covered by a player during a match. Running at speeds over 25 km/h is considered speed, and the higher this speed, the greater the player's fitness level, as confirmed by CatapultSport (2022).

Conclusions and Recommendations

I. Research Conclusions:

- The competitive exercises based on the GPS tracking device readings used on the experimental group have a significant effect on improving the physical aspect (speed).
- It is essential to use the GPS tracking device to enhance the speed of each player.
- The use of the Polar H9 heart rate monitor is necessary during speed training.

II. Research Recommendations:

- It is recommended that fitness coaches in the Iraqi Premier League use the GPS tracking device to develop other physical aspects.
- It is recommended that fitness coaches in the Iraqi Premier League use the Polar H9 heart rate monitor to develop other physical aspects.
- It is recommended that the readings from the above-mentioned devices be used to create individualized competitive exercises for each player to improve other physical aspects, by fitness coaches in the Iraqi Premier League.

Acknowledgments:

I would like to express my sincere gratitude and appreciation to Al-Talaba Sports Club for providing the opportunity to conduct this research, as well as for their support in providing player data and conducting the necessary tests.

Appendices

Sample of Training Units and Exercises:

Training Unit 1

- **Location:** Baghdad University Campus, Jadriya
- **Week:** First
- **Training Date:** Tuesday, 25/10/2022
- **Month:** First
- **Goal:** Speed Development

Main Section of the Training Unit during Special Preparation Phase

Exercise Name	Intensity	Performance Time	Rest Between Repetitions	Repetitions	Sets	Rest Between Sets	Total Time	Total
Speed (3)	100%	7 sec	42 sec	6	3	120 sec	14.5 min	31.7 min
Speed (1)	100%	8 sec	64 sec	4	3	120 sec	17.2 min	

Training Unit 5

- **Location:** Baghdad University Campus, Jadriya
- **Week:** Second
- **Training Date:** Thursday, 3/11/2022
- **Month:** First
- **Goal:** Speed Development

Main Section of the Training Unit during Special Preparation Phase

Exercise Name	Intensity	Performance Time	Rest Between Repetitions	Repetitions	Sets	Rest Between Sets	Total Time	Total
Speed (2)	98%	7 sec	49 sec	4	3	150 sec	13.75 min	29.55 min
Speed (4)	98%	7 sec	56 sec	4	3	180 sec	15.8 min	

Training Unit 9

- **Location:** Baghdad University Campus, Jadriya
- **Week:** Second
- **Training Date:** Saturday, 12/11/2022
- **Month:** Second
- **Goal:** Speed Development

Main Section of the Training Unit during Special Preparation Phase

Exercise Name	Intensity	Performance Time	Rest Between Repetitions	Repetitions	Sets	Rest Between Sets	Total Time	Total
Speed (4)	100%	7sec	56 sec	4	3	180 sec	15.8 min	28.45 min
Speed (5)	100%	7 sec	56 sec	3	3	180 sec	12.65 min	

Training Unit 10

- **Location:** Baghdad University Campus, Jadriya
- **Week:** Second
- **Training Date:** Tuesday, 15/11/2022
- **Month:** Second
- **Goal:** Speed Development

Main Section of the Training Unit during Special Preparation Phase

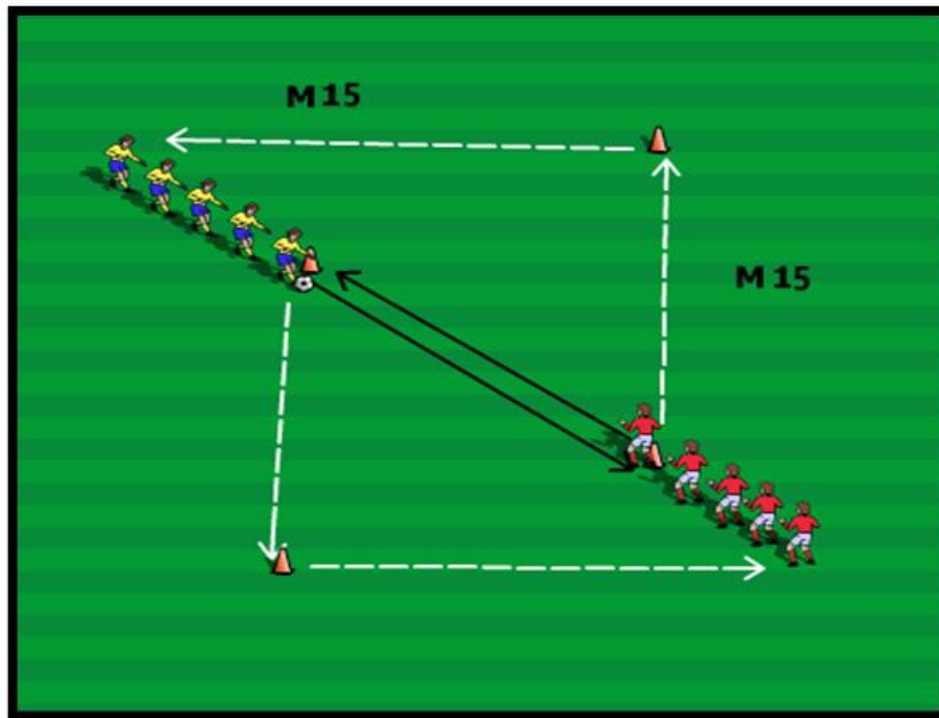
Exercise Name	Intensity	Performance Time	Rest Between Repetitions	Repetitions	Sets	Rest Between Sets	Total Time	Total
Speed (1)	98%	8 sec	64 sec	4	3	180 sec	17.2 min	34.4 min
Speed (6)	98%	8 sec	64 sec	4	3	180 sec	17.2min	

Second: Exercises

Speed Exercise (1)

- **Objective of the Exercise:** Sprint at high speed and change direction without the ball.
- **Equipment:** Footballs, cones, number of players: 10
- **Field Dimensions:** Half-field
- **Description of the Performance:**

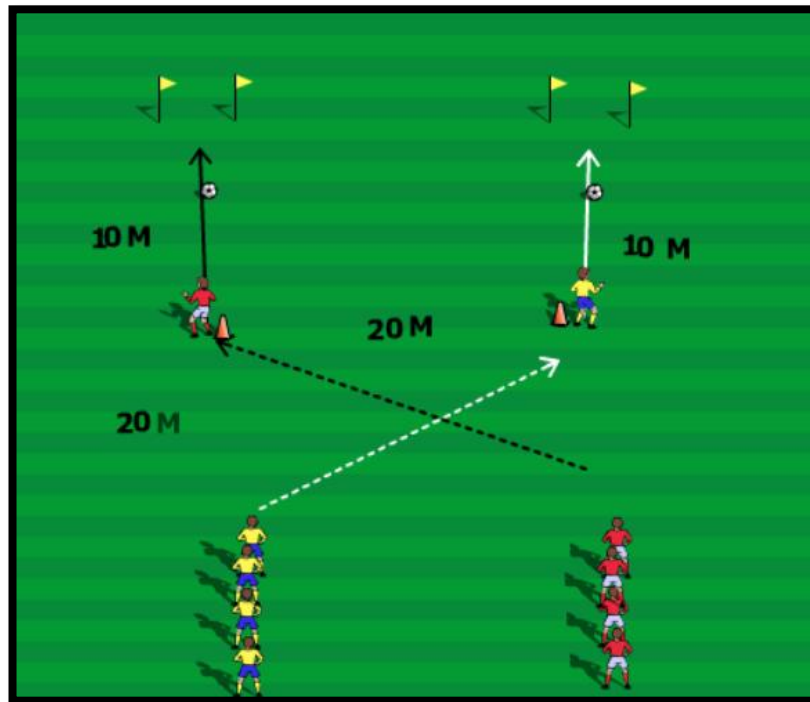
The exercise is performed in a square shape with each side measuring 15 meters. The players are divided into two groups, each consisting of 5 players with a ball. Upon hearing the whistle, the first player passes the ball diagonally to the opposing player and then sprints at high speed in an L-shape (15 meters) and another 15 meters to reach the end of the opposite group.



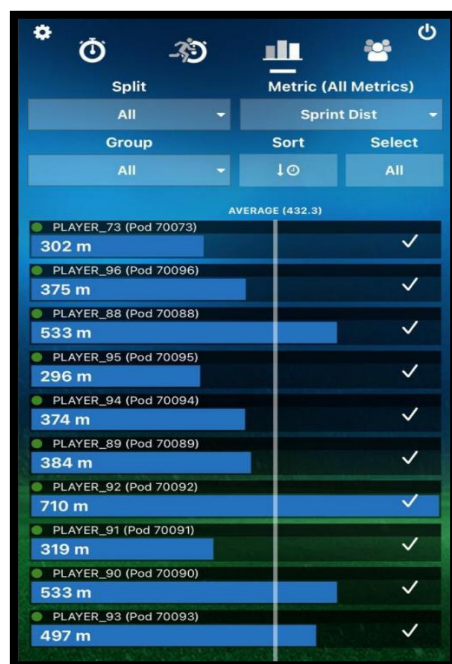
Passing Accuracy Exercise (2)

- **Objective of the Exercise:** Sprint at high speed, change direction, and pass accurately.
- **Equipment:** Footballs, cones
- **Number of Players:** 10
- **Field Dimensions:** Half-field
- **Description of the Performance:**

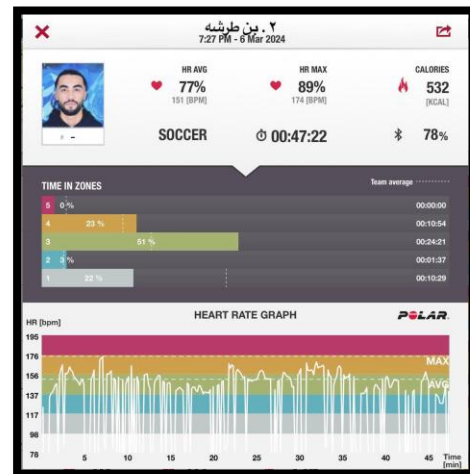
The exercise is performed with players standing in two groups, each with a ball. In front of each group, there are two cones placed 1 meter apart, and another cone is placed 20 meters away from the group. A final cone is placed 15 meters away from the previous cone, making the total distance between the player and the cones 35 meters. Upon hearing the whistle, the first player sprints diagonally from each group toward the cone, then performs an accurate pass to one of the cones.



Appendix 1: Images of GPS Playertek Plus and Polar H9 Devices



TOTAL PLAYERS	AVERAGE [%]	MAXIMUM [%]	CALORIES [KCAL]
	69 AVERAGE [%]	88 MAXIMUM [%]	1068 CALORIES [KCAL]
	65 AVERAGE [%]	94 MAXIMUM [%]	949 CALORIES [KCAL]
	69 AVERAGE [%]	85 MAXIMUM [%]	839 CALORIES [KCAL]
	66 AVERAGE [%]	95 MAXIMUM [%]	855 CALORIES [KCAL]
	70 AVERAGE [%]	95 MAXIMUM [%]	1023 CALORIES [KCAL]
	63 AVERAGE [%]	92 MAXIMUM [%]	758 CALORIES [KCAL]
	76 AVERAGE [%]	99 MAXIMUM [%]	916 CALORIES [KCAL]
	56 AVERAGE [%]	81 MAXIMUM [%]	557 CALORIES [KCAL]
	58 AVERAGE [%]	78 MAXIMUM [%]	650 CALORIES [KCAL]
	58 AVERAGE [%]	88 MAXIMUM [%]	676 CALORIES [KCAL]



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The effect of a psychological counselling approach on cognitive load and mental fatigue among young 110-meter hurdles athletes

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Abstract

The aim of the research was to construct two specialized scales: one for measuring cognitive load and another for mental stress, and to identify their levels among young 110-meter hurdles athletes. Furthermore, the research aimed to design a psychological counselling program to mitigate the levels of cognitive load and mental stress among these athletes. The research hypotheses posited that there are statistically significant differences between the pre-test and post-test results of the experimental group in cognitive load measurement, and that there are statistically significant differences between the pre-test and post-test results of the experimental group in mental stress measurement. The experimental method was adopted, employing a one-group pre-test and post-test design. The sample included 8 young athletes specializing in the 110-meter hurdles, who were deliberately selected following a survey using the two scales, representing 42.105% of the target population. The total population comprised 19 young 110-meter hurdles athletes from the Al-Jaish Sports Club during the 2023/2024 sports season. Additionally, a similar population from other Baghdad sports clubs practicing the same discipline was utilized, comprising 5 athletes for the pilot study and 105 athletes for the scale construction sample. Two specialized scales were developed for this category of athletes, tailored to the specific requirements of the current research, through the adoption of several systematic steps. Subsequently, a psychological counselling program was designed to address and reduce both phenomena under investigation, using diagnostic measurement as a basis. The program was implemented as part of the research experiment, which commenced with the application of the two scales measuring the investigated phenomena during the pre-tests on Sunday, March 3, 2024. This was followed by the implementation of the psychological

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counselling program for 110-meter hurdles athletes, conducted weekly on Mondays from March 4, 2024, to April 10, 2024. The experiment concluded with the post-tests on Thursday, April 11, 2024. The data were analysed using the SPSS system, leading to the conclusions and applications that the cognitive load and mental stress scales are suitable for young 110-meter hurdles athletes. These scales demonstrated effectiveness for their intended purpose of measuring these two phenomena and meet the scientific standards and requirements necessary for the acceptance of scales in sports psychology. Furthermore, the practical applications of the psychological counselling program designed to reduce cognitive load and mental stress levels were found to be appropriate for young 110-meter hurdles athletes. It is essential to prioritize diagnostic psychological measurement and its applications for young 100-meter hurdles athletes to monitor their psychological state and address or mitigate psychological issues before they escalate. Moreover, it is crucial to consider the specific characteristics of the training and competitive environment of 100-meter hurdles athletes, as well as the specialized concepts of sports psychology, when designing appropriate psychological counselling programs for this category of youth.

Keywords: Psychological Counselling Program, Cognitive Load, Mental Stress, Young 110-Meter Hurdles Athletes.

Introduction:

Athletics events receive significant attention in sports psychology studies, as breaking records has become a regular occurrence year after year. What was once considered an extraordinary feat has now become a reality. The scientific and technological advancements in various fields, including sports psychology, have played a major role and had a clear impact on achieving progress in this domain. (Othman, 2017).

Mental preparation is one of the most important elements of an athlete's training, enabling them to achieve optimal performance. It teaches the athlete to endure long and demanding training hours without boredom or frustration, and to handle unforeseen circumstances such as bad luck, unexpected injuries, or uncontrollable factors that may impact their athletic performance according to their training program. (Bahi and Jad, 2004).

It is essential to address and avoid many discouraging factors, such as fear of failure and mental fatigue resulting from inadequate support from the coach or management, or a lack of enjoyment in training and competition. The presence of these factors weakens the athlete's determination to continue training with the same intensity and enthusiasm. (Yassin, 2016).

The athlete's engagement in repetitive mental habits leads to responses to stressful situations during coping and adaptation processes under competitive conditions. This involves behavioural and cognitive efforts undertaken in response to the type of stressor encountered.

Additionally, certain mental, emotional, biological, and demographic traits influence the interaction with stress factors and may potentially result in mental fatigue. (Mousse & Schaefer, 2013).

The specificity of the 110-meter hurdles event relies on several technical aspects that govern the utilization of physical abilities. This drives coaches to increase their guidance and instructions regarding these technical aspects, aiming to enhance the athlete's control over them and avoid technical errors during high-speed running and the required jumps to clear the hurdles without mistakes. However, the overload of information and knowledge creates psychological pressure on the mind, burdening it with the task of comprehending and interpreting these inputs. Simultaneously, it strains the athlete's mental faculties and weakens their focus during the race.

Many of the psychological pressures experienced by athletes stem from the excessive or accumulated instructions they receive from coaches, which place a burden on their cognitive abilities during competitions. Additionally, threats, punitive measures, ridicule, neglect, and aggressive behaviours encountered in their training environments further contribute to these pressures. (Hyman & Zelikoff, 2009).

Perception, in general and across its various types, refers to an individual's unique method or approach to organizing, receiving, processing, and understanding information as a mental process that occurs within the brain. It relies on the integrity of the senses, as well as the activity and focus of attention. The process of perception is followed by storage and retrieval operations in memory, which subsequently lead to decision-making. (Goetz & Ash, 2006).

It is worth noting that "if an athlete lacks information indicating their progress in performing a task or their perception of self-efficacy, the effort exerted to achieve the goal will be weak. Conversely, athletes are willing to exert effort to reach their goal if they receive appropriate feedback and possess a high level of perception of self-efficacy in performing a given task. (Proven, 2010).

This means that an individual's cognitive map is not a photographic capture of the external world but rather a personal construct through which the individual selects certain subjects to play a significant role, perceiving them in their own unique way." (Al-Tuhami et al., 2018)

Cognitive load of knowledge is defined as the total amount of mental activity in working memory within a specific period of time. It can be measured by the number of cognitive units or elements involved in mental processing during a given time frame. (Faraj, 2008).

John Sweller developed the theory of cognitive load, in which he stated that human knowledge is divided into two types: fundamental knowledge and secondary knowledge.

Fundamental knowledge refers to information that has evolved and been passed down from one generation to another, such as speaking a native language, forming social relationships, and employing certain problem-solving strategies. This type of knowledge is acquired effortlessly, without direct learning or effort by the individual. Secondary knowledge, on the other hand, involves intentional learning undertaken by the individual and requires effort to acquire. The theory focuses on this type of knowledge, emphasizing the principles of cognitive organization and information storage. (Sweller, 2003).

Cognitive Load is a term used in psychology and education to describe the mental effort required to process information. This concept focuses on how the quantity and complexity of information influence an individual's ability to perform a specific task. Cognitive load can be categorized into three main types. (Sweller, 2011).

1. **Intrinsic Cognitive Load:** This type relates to the inherent nature of certain topics or tasks that naturally demand greater effort to understand, depending on the interactions and relationships among their elements.
2. **Extraneous Cognitive Load:** This type concerns how information is presented or organized. Poorly designed information sources, such as overly complex explanations or a lack of organization, can significantly increase this load.
3. **Germane Cognitive Load:** This type refers to the mental effort dedicated to processing information and constructing effective cognitive structures. It represents the constructive effort that facilitates deep understanding and meaningful knowledge assimilation.

Continuous mental efforts that require cognitive functions, combined with high levels of psychological and physical stress and negative emotions, play a significant role in generating mental fatigue. Symptoms of mental fatigue include reduced concentration and an increased likelihood of errors during the performance of complex cognitive tasks. In addition to its cognitive effects, mental fatigue also has physiological impacts that arise from engaging in demanding mental activities. (Soto et al., 2011).

Persistent or chronic mental fatigue is considered one of the most prevalent ailments of modern civilization and urbanization in our contemporary era. The constant sense of responsibility and the pressure of commitments have placed many individuals under the burden of chronic fatigue, particularly in training environments. This condition, in numerous cases, extends into the personal lives of athletes and can subtly develop into chronic physical and mental exhaustion. In this context, it is worth noting that mental, nervous, physical, and psychological fatigue inevitably lead to the onset of some of the most feared diseases. (Belmont et al., 2006).

Scientists have approached the concept of stress from numerous perspectives, to the extent that they have highlighted the difficulty of establishing a universally agreed-upon definition.

One of the main challenges in defining stress lies in its nature as an integrated program that depends on the factor causing it, the response to that factor, as well as the state of the individual responding. Stress is considered a major common factor in all of our daily lives; however, the key is learning how to keep it under control. Stress can work either against you or in your favour. The term 'stress' has become widely used in psychology and psychiatry and was borrowed from engineering and physics studies, where it originally referred to (Stress), (Fatigue), and (Load). (Abu Dalu, 2009).

Mental fatigue has significant effects on the central nervous system, particularly on the brain." (Al-Bayati, 2009) Zerwal (2008) indicates that Zblagi and Wallace believe that stress has an internal impact, leading to a state of psychological or physical imbalance within the individual. This results from factors stemming both from the external environment and the individual themselves, emphasizing the role of external stimuli in the occurrence of stress.

It becomes evident that behavioural therapy is essential for reducing the levels of these two phenomena when present in 110-meter hurdles athletes. This necessity arises from the effects of the training environment, the nature of training tasks, competitive responsibilities, and the pressures of coaching instructions, which can narrow the channel of information and knowledge about competitive performance. It is crucial to provide the athlete with the opportunity to independently explore the requirements of tasks, enabling them to identify the necessary capabilities and work on their development to meet these demands. This does not imply dispensing with the coach's guidance, but rather that such guidance must remain within reasonable limits to avoid placing undue pressure on the athletes. Among the most effective behavioural treatments are psychological counselling programs specifically designed for the sports environment.

Psychological counselling is defined as "a science, an art, and a practice. It is a relatively modern field, initially emerging in connection with the vocational guidance movement in the early 20th century, though it did not flourish until the 1930s. The counselling process aims to assist individuals in understanding themselves, analyzing their personalities, recognizing their experiences, identifying their problems, developing their potentials, achieving their goals, and attaining psychological health and personal, educational, professional, and familial adjustment. (Al-Khaikani et al., 2016).

Psychological counselling is also defined as "a set of planned activities conducted in an atmosphere of respect and appreciation, aimed at helping individuals address their problems, train them to make appropriate decisions, find necessary solutions, develop their abilities and skills, and modify their attitudes. (Abu Asaad & Arabiyat, 2019).

Given the researchers' academic specialization in sports psychology for athletics and their repeated field visits to training sessions in Baghdad clubs, as well as consultations with coaches

at Al-Jaish Sports Club - which includes the largest number of young 110-meter hurdles athletes - the researchers identified psychological issues that these athletes were unable to measure. Following inquiries into the preliminary situation, the researchers decided to measure cognitive load and mental fatigue to better understand the problem through assessment. Subsequently, they employed behavioural therapy through psychological sports counselling to benefit both the coaches and the athletes, aiming to help them achieve better performance levels. This approach underscores the importance of the psychological factor, which is no less significant than the physical and technical factors in their training programs. The research aims to develop two specialized scales: one for measuring cognitive load and the other for mental fatigue, and to identify their levels among young 110-meter hurdles athletes. Additionally, it seeks to design a psychological counselling program to reduce cognitive load and mental fatigue levels in this group. The research hypotheses propose that there are statistically significant differences between the pre-test and post-test results of the experimental group in measuring cognitive load, as well as statistically significant differences between the pre-test and post-test results of the experimental group in measuring mental fatigue.

Methodology and Procedures:

The population of this research comprised 19 young 110-meter hurdles athletes from Al-Jaish Sports Club during the 2023/2024 sports season. From this population, a purposive sample of 8 athletes was selected, representing 42.105% of the total population. This selection was made following a field survey in which the study's two scales were applied, choosing athletes who scored above the hypothetical mean on both scales. Additionally, a pilot sample of 5 young 110-meter hurdles athletes was selected from a similar population in other sports clubs across Baghdad. Furthermore, a sample of 105 young 110-meter hurdles athletes were included for scale construction purposes.

Due to the lack of specialized measurement tools for the two phenomena under investigation among 110-meter hurdles athletes, the researchers developed two paper-and-pencil scales based on the principles of psychological measurement and evaluation in physical education sciences. They followed field procedures and statistical treatments that prioritized efficiency and minimized repetitive application to avoid measurement errors. The researchers prepared 20 items for the cognitive load scale and 21 items for the mental fatigue scale, using the theoretical framework of both phenomena to construct the initial version of each scale. Each item was designed with three response options: "Always," "Sometimes," and "Never," with a scoring key of (3, 2, 1), respectively. A higher score indicates a higher level of the phenomenon being measured. The researchers developed a survey to present the two scales to 19 academics specializing in sports psychology, testing and measurement, and athletics. All academics unanimously agreed to retain the items as they were, achieving a 100% approval rate. This granted both scales face and logical validity, as this percentage exceeds the 80% threshold specified by Bloom's criteria for validity acceptance. Subsequently, the two scales

were piloted on a sample of five athletes from Al-Shurta Sports Club to identify any potential challenges that might arise during the main study and to ensure the clarity of the items for the sample. The average completion time for each scale was calculated, with both the cognitive load scale and the mental fatigue scale requiring five minutes each. Subsequently, the discriminatory power of the items in each scale was verified by applying them to the construction sample, which consisted of 105 athletes. A proportion of 27% was used to identify the two extreme groups, each comprising 28.35 participants, rounded to 28 for practical purposes. The scores of these two groups were then statistically compared using the t-test for independent samples, as illustrated by the results in Tables (1) and (2).

Table (1) shows the results of the discriminatory power analysis for the items of the cognitive load scale.

Item	Group	Number	Arithmetic Mean	Standard Deviation	(t)	(Sig)	Statistical Difference	Discrimination
1	Upper	28	2.96	0.189	17.859	0.000	Significant	Distinctive
	Lower	28	1.29	0.46				
2	Upper	28	2.68	0.476	9.887	0.000	Significant	Distinctive
	Lower	28	1.39	0.497				
3	Upper	28	2.93	0.262	15.01	0.000	Significant	Distinctive
	Lower	28	1.36	0.488				
4	Upper	28	2.64	0.488	8.855	0.000	Significant	Distinctive
	Lower	28	1.46	0.508				
5	Upper	28	2.89	0.315	13.038	0.000	Significant	Distinctive
	Lower	28	1.43	0.504				
6	Upper	28	2.61	0.497	8.231	0.000	Significant	Distinctive
	Lower	28	1.5	0.509				
7	Upper	28	2.86	0.356	11.023	0.000	Significant	Distinctive
	Lower	28	1.57	0.504				
8	Upper	28	2.57	0.504	6.647	0.000	Significant	Distinctive
	Lower	28	1.71	0.46				
9	Upper	28	2.82	0.39	10.624	0.000	Significant	Distinctive
	Lower	28	1.54	0.508				
10	Upper	28	2.54	0.508	6.708	0.000	Significant	Distinctive
	Lower	28	1.64	0.488				
11	Upper	28	2.79	0.418	9.815	0.000	Significant	Distinctive
	Lower	28	1.57	0.504				
12	Upper	28	2.5	0.509	6.638	0.000	Significant	Distinctive
	Lower	28	1.61	0.497				
13	Upper	28	2.75	0.441	8.742	0.000	Significant	Distinctive
	Lower	28	1.68	0.476				
14	Upper	28	2.46	0.508	5.62	0.000	Significant	Distinctive
	Lower	28	1.75	0.441				
Item	Group	Number	Arithmetic Mean	Standard Deviation	(t)	(Sig)	Statistical Difference	Discrimination
15	Upper	28	2.71	0.46	8.133	0.000	Significant	Distinctive
	Lower	28	1.71	0.46				
16	Upper	28	2.43	0.504	5.196	0.000	Significant	Distinctive
	Lower	28	1.79	0.418				
17	Upper	28	2.68	0.476	7.314	0.000	Significant	Distinctive

	Lower	28	1.86	0.356				
18	Upper	28	2.39	0.497	4.784	0.000	Significant	Distinctive
	Lower	28	1.82	0.39				
19	Upper	28	2.64	0.488	6.833	0.000	Significant	Distinctive
	Lower	28	1.89	0.315				
20	Upper	28	2.36	0.488	3.973	0.000	Significant	Distinctive
	Lower	28	1.96	0.189				

An item is considered distinctive if (Sig) < (0.05) at a significance level of 0.05 and with a degree of freedom of 54.

Table (2) presents the results of the discriminatory power analysis for the items of the mental fatigue scale.

Item	Group	Number	Arithmetic Mean	Standard Deviation	(t)	(Sig)	Statistical Difference	Discrimination
1	Upper	28	2.89	0.315	16.042	0.000	Significant	Distinctive
	Lower	28	1.25	0.441				
2	Upper	28	2.61	0.497	9.493	0.000	Significant	Distinctive
	Lower	28	1.36	0.488				
3	Upper	28	2.86	0.356	13.674	0.000	Significant	Distinctive
	Lower	28	1.32	0.476				
4	Upper	28	2.57	0.504	8.485	0.000	Significant	Distinctive
	Lower	28	1.43	0.504				
5	Upper	28	2.82	0.39	11.96	0.000	Significant	Distinctive
	Lower	28	1.39	0.497				
6	Upper	28	2.54	0.508	7.894	0.000	Significant	Distinctive
	Lower	28	1.46	0.508				
7	Upper	28	2.79	0.418	10.057	0.000	Significant	Distinctive
	Lower	28	1.54	0.508				
8	Upper	28	2.57	0.504	6.818	0.000	Significant	Distinctive
	Lower	28	1.68	0.476				
9	Upper	28	2.75	0.441	9.82	0.000	Significant	Distinctive
	Lower	28	1.50	0.509				
10	Upper	28	2.46	0.508	6.381	0.000	Significant	Distinctive
	Lower	28	1.61	0.497				
11	Upper	28	2.71	0.46	9.101	0.000	Significant	Distinctive
	Lower	28	1.54	0.508				
12	Upper	28	2.43	0.504	6.364	0.000	Significant	Distinctive
	Lower	28	1.57	0.504				
13	Upper	28	2.68	0.476	8.043	0.000	Significant	Distinctive
	Lower	28	1.64	0.488				
14	Upper	28	2.39	0.497	5.3	0.000	Significant	Distinctive
	Lower	28	1.71	0.46				
15	Upper	28	2.64	0.488	7.488	0.000	Significant	Distinctive
	Lower	28	1.68	0.476				
16	Upper	28	2.36	0.488	4.885	0.000	Significant	Distinctive
	Lower	28	1.75	0.441				
Item	Group	Number	Arithmetic Mean	Standard Deviation	(t)	(Sig)	Statistical Difference	Discrimination

17	Upper	28	2.61	0.497	6.578	0.000	Significant	Distinctive
	Lower	28	1.82	0.39				
18	Upper	28	2.32	0.476	4.478	0.000	Significant	Distinctive
	Lower	28	1.79	0.418				
19	Upper	28	2.57	0.504	6.124	0.000	Significant	Distinctive
	Lower	28	1.86	0.356				
20	Upper	28	2.29	0.46	3.569	0.000	Significant	Distinctive
	Lower	28	1.93	0.262				
21	Upper	28	2.89	0.315	14.577	0.000	Significant	Distinctive
	Lower	28	1.32	0.476				

An item is considered distinctive if (Sig) < (0.05) at a significance level of 0.05 and with a degree of freedom of 54.

To further validate the scientific validity of the study's two scales, Pearson's simple correlation coefficients were calculated between each item's score and the total score of the corresponding scale. This was done using the statistical analysis of the scores obtained from the application of the scales to the construction sample, which consisted of 105 athletes specializing in the 110-meter hurdles. The results are presented in Tables (3) and (4).

Table (3) shows the internal consistency of the items' correlation with the total score of the cognitive load scale.

Item	Correlation Coefficient Between the Item and Total Score	(Sig)	Item	Correlation Coefficient Between the Item and Total Score	(Sig)
1	0.391	0.000	11	0.862	0.000
2	0.677	0.000	12	0.616	0.000
3	0.661	0.000	13	0.556	0.000
4	0.505	0.000	14	0.541	0.000
5	0.511	0.000	15	0.733	0.000
6	0.553	0.000	16	0.424	0.000
7	0.769	0.000	17	0.477	0.000
8	0.621	0.000	18	0.601	0.000
9	0.575	0.000	19	0.517	0.000
10	0.815	0.000	20	0.622	0.000

An item is considered consistent if (Sig) > (0.05) at a degree of freedom of 103 and a significance level of 0.05.

Table (4) presents the internal consistency of the items correlated with the total score of the mental fatigue scale.

Item	Correlation Coefficient Between the Item and Total Score	(Sig)	Item	Correlation Coefficient Between the Item and Total Score	(Sig)
1	0.832	0.000	11	0.723	0.000
2	0.681	0.000	12	0.401	0.000
3	0.709	0.000	13	0.533	0.000
4	0.535	0.000	14	0.475	0.000
5	0.964	0.000	15	0.741	0.000
6	0.642	0.000	16	0.762	0.000
7	0.411	0.000	17	0.423	0.000

8	0.722	0.000	18	0.727	0.000
9	0.614	0.000	19	0.504	0.000
10	0.654	0.000	20	0.536	0.000

An item is considered consistent if (Sig) > (0.05) at a degree of freedom of $n - 2 = 103$ and a significance level of 0.05.

The same application scores of the two scales were used for the construction sample, consisting of 105 young 110-meter hurdles athletes, to statistically verify reliability using Cronbach's Alpha coefficient. The reliability coefficient for the cognitive load scale was 0.833, while for the mental fatigue scale, it was 0.885, at a degree of freedom of 103 and a significance level of 0.05. Additionally, the suitability of the two scales for young 110-meter hurdles athletes was confirmed by statistically verifying the normal distribution of the data, as shown in the results of Table (5).

Table (5) presents the final statistical parameters and normal distribution values for the two scales.

Scale Name	Number of Items	Total Score	Number of Athletes in Construction Sample	Arithmetic Mean	Standard Deviation	Skewness Coefficient
Cognitive Load	20	60	105	34.64	1.279	-0.862
Mental Fatigue	21	65	105	36.3	1.936	-0.169

The distribution is considered normal if the skewness value falls within the range of ± 1 .

Following this procedure, the researchers completed the development of the two scales in their final forms (Appendices 2 and 3). The total score for the cognitive load scale ranged between 20 and 60, with a hypothetical mean of 40, while the total score for the mental fatigue scale ranged between 21 and 65, with a hypothetical mean of 42. To select the participants for the study from the youth category athletes at Al-Jaish Sports Club, a survey was conducted on 19 110-meter hurdles athletes. It was found that 8 of them had scores above 40, indicating values greater than the hypothetical mean for both scales. This suggests the presence of the two undesirable psychological phenomena among these athletes. Furthermore, this measurement process was beneficial in diagnosing weaknesses in the items that contributed to the high levels of both phenomena among these athletes. Subsequently, three items from each scale were included in psychological counselling sessions as part of the program's sessions.

The steps involved in designing a model for the psychological counselling program for 110-meter hurdles athletes included the following:

- Identifying specific needs for reducing cognitive load and mental fatigue.
- Selecting priorities for reducing cognitive load and mental fatigue.
- Defining and documenting the objectives of the psychological counselling program aimed at reducing cognitive load and mental fatigue.

- Developing strategies and techniques to achieve the planned objectives of the psychological counseling program for reducing cognitive load and mental fatigue, including the use of visual aids and videos to minimize the explanatory burden during counselling sessions.
- Evaluating the outcomes of the psychological counselling program in terms of reducing cognitive load and mental fatigue.
- Implementing the psychological counselling program to reduce cognitive load and mental fatigue.

The implementation of the psychological counselling sessions aimed at reducing cognitive load and mental fatigue was conducted as follows:

1. The young 110-meter hurdles athletes were seated in a comfortable and suitable environment, free from disturbances or distractions. Quiet and calming conditions were ensured, with the elimination of any factors that could negatively impact this psychological counselling setting.
 2. Each counselling session lasted 30 minutes.
 3. A total of 12 counselling sessions were conducted, with two sessions held each week on Mondays and Wednesdays, aligning with the athletes' regular training schedule and availability.
 4. The implementation of the counseling sessions for the program aimed at reducing cognitive load and mental fatigue continued for six weeks.
 5. The counseling sessions were conducted alongside the regular training of the young 110-meter hurdles athletes but were scheduled outside of the training times (i.e., before the regular training units). These sessions were carried out without introducing any experimental changes to their established training regimen. The sessions incorporated psychological counseling techniques targeting two key aspects to reduce cognitive load and mental fatigue through various applications, some examples of which are outlined below:
- **Physical and Mental Relaxation:** Utilizing calming strategies, listening to soothing music, and avoiding auditory distractions.
 - **Cognitive Flexibility:** Developing the ability to shift between positive thoughts easily and flexibly, without stress, repetition, or monotony.
 - **Self-Awareness and Control:** Directing the senses to acquire knowledge that positively contributes to their training and performance.
 - **Understanding Responsibility:** Employing strategies for continuous innovation and generation of new ideas by stimulating experiences of sensory and cognitive curiosity.
 - **Mental Activation:** Using strategies to foster curiosity, experimentation, and openness to intellectually challenging ideas, integrated with models of cognitive immersion.

The research experiment began with the administration of the scales for the two investigated phenomena during the pre-tests on Sunday, March 3, 2024. This was followed by

the implementation of the psychological counselling program for 110-meter hurdles athletes, which spanned from March 4, 2024, to April 10, 2024, with sessions conducted every Monday. The experiment concluded with the post-tests on Thursday, April 11, 2024.

The research results were processed using SPSS software to calculate percentages, arithmetic means, standard deviations, skewness coefficients, Pearson's simple correlation coefficients, Cronbach's Alpha coefficients, the paired-samples t-test, and the independent-samples t-test.

Results:

Table (6) presents the results of the pre-tests for the experimental research group.

Phenomena	Group and Number of Athletes		Arithmetic Mean	Standard + Deviation	(Liveen)	(Sig)	Difference
Cognitive Load of 110-Meter Hurdles Athletes	Experimental	8	49.13	4.19	0.401	0.302	Not Significant
Mental Fatigue of 110-Meter Hurdles Athletes	Experimental	8	50.5	4.957	0.227	0.665	Not Significant

Homogeneity of variance for the experimental research group was determined using Levene's test, with significance assumed when $\text{Sig} > 0.05$ at 7 degrees of freedom.

Table (7) presents the results of the pre-tests and post-tests for the experimental research group.

Phenomena	Group and Number of Athletes	Comparison	Arithmetic Mean	+ Standard Deviation	Variance	Degrees of Freedom (df)	(t)	(Sig)	Difference
Cognitive Load of 110-Meter Hurdles Athletes	Experimental (8)	Pre-test	49.13	4.19	14.875	5.436	7.739	0.000	Significant
		Post-test	34.25	1.581					
Cognitive Load of 110-Meter Hurdles Athletes	Experimental (8)	Pre-test	50.5	4.957	14	5.732	6.908	0.000	Significant
		Post-test	36.5	2					

The statistical difference is significant when $(\text{Sig}) \leq 0.05$ at a degree of freedom (7).

Discussion:

The results presented in Table (7) indicate that the levels of both cognitive load and mental fatigue decreased among the 110-meter hurdles athletes in the experimental research group during the post-tests. The researchers attribute this improvement to the positive impact of the psychological counselling program, which was implemented alongside the regular training regimen. This program addressed the conditions that had previously exacerbated these two phenomena before the intervention. The counselling program, specifically designed to reduce cognitive load and mental fatigue among young 110-meter hurdles athletes, emphasized logical persuasion to encourage the voluntary participation of athletes in the counselling sessions. Through the program's applications, such as physical and mental relaxation, new perceptions were built, and the knowledge they received was simplified by breaking it down into manageable components. This took place in a calming environment aimed at alleviating psychological tension and dismantling the mental blocks caused by repetitive and tedious cognitive instructions from certain coaches. This approach facilitated the athletes' ability to shift their perceptions from negative beliefs about their training and competition to positive ones that enhanced their performance. As a result, their sensory awareness and self-awareness were enhanced, allowing them to prioritize knowledge based on its importance and relevance. This development fostered a sense of responsibility to recognize and address the most significant knowledge required by young 110-meter hurdles athletes, enabling them to innovate new ideas to achieve their performance goals in this discipline. Additionally, the psychological counselling program played a positive role in stimulating mental activity by employing strategies of curiosity, experimentation, and openness to intellectually challenging ideas that previously caused mental strain before the implementation of this program. At the same time, it helped reduce mental fatigue by adopting mechanisms for disregarding irrelevant knowledge and efficiently processing essential information through logical and reasonable cognitive strategies, thus avoiding unnecessary mental exhaustion caused by excessive interpretations.

"Psychological counselling can help individuals learn techniques for relaxation, meditation, and focus, improve mental organization and positive thinking skills, and develop strategies to manage mental distraction and psychological stress." (Piet and Hougaard, 2011, p. 1335).

Advancing the individual in an era characterized by movement and change is not achieved merely by presenting ideas, but through understanding, comprehension, and the assimilation and application of knowledge. This is reflected in behavioural patterns that enable individuals to keep pace with the evolving dynamics of the modern age. (Lifta, 2000).

The social environment plays a prominent role in satisfying individuals' needs and motivates them to learn behaviours that either bring reinforcement or help them avoid punishment within the social context in which they interact. (Abu Riyash, 2007).

Similarly, psychological counselling plays an important role in stimulating the mind by providing individuals with the skills and strategies necessary to improve awareness, attention, and focus. It also works to enhance awareness of factors that may negatively impact the mind and provides the tools needed to address and improve them. (Rempfer & Wang, 2017).

A good psychological state enables an athlete to better transform negative thoughts into positive ones. This allows them to recall pleasant events and emotions experienced during a successful competition, which may positively influence their competitive behaviour. Conversely, a poor psychological state may cause them to remember negative and unsuccessful events and emotions they have encountered, which would then negatively affect their competitive behaviour. (Al-Ghurairi, 2005).

Players can practice meditation techniques and concentration exercises to calm the mind and enhance awareness of the present moment during training. This involves deliberately directing their senses to focus on the sensations of breathing, movement, and visual and auditory perceptions during their sessions, thereby activating their cognitive awareness and promoting interaction with a calm mind to avoid mental fatigue. (Keng et al., 2011).

Similarly, "appropriate cognitive load is generated through the development of a cognitive schema, which requires additional capacity in working memory. (Kadhim et al., 2021) Sensory memory organizes the passage of information from the senses to short-term memory, allowing the transfer of approximately four to five cognitive units at a time. (Kadhim, 2023) A cognitive unit could be a word, letter, image, or sentence. Sensory memory does not perform any cognitive processing of information; instead, processing begins in short-term memory. (Abu Riyash, 2007).

It is observed that the theory of cognitive load has established two main principles for reducing cognitive load and maximizing learning in individuals. The first principle involves designing educational models based on the individual's cognitive structure, while the second emphasizes placing greater focus on the construction method. It is crucial to link an individual's cognitive structure with educational designs, as the unique aspect of human thought lies in the quantitative dimension, represented by the amount of information stored in long-term memory. This capacity is what creates intellectual differences among humans and between humans and other living beings. Therefore, educational designs must be tailored to the individual's cognitive capacity to achieve the highest possible level of learning. (Mayer and Moreno, 2003).

An individual must answer the question, 'What can I do when faced with a stressful situation?' The individual's sense of threat depends on their assessment of the level of danger inherent in the situation. Based on this assessment, the type of response is determined. If the response is positive, coping and resistance mechanisms can be successfully employed. However, if the response is negative, these mechanisms fail to address the stress, leading to a loss of self-esteem and fear. (Kafafi, 2012).

Self-control prevents undesirable responses, resulting in self-reinforcement, which underscores the significance of self-control. (Hashim, 2006).

Moreover, 'an individual's beliefs about their ability to exercise self-control determine the extent to which they can regulate their emotions and their capacity to endure mental stress. The greater their self-control, the stronger their determination to overcome stress-inducing circumstances with willpower and resolve. This enables them to address such challenging situations and problems effectively. Additionally, it underscores the significant impact of the

physiological and emotional environment on an individual's ability to exercise self-control. This is achieved through their perception of self-efficacy in managing their emotions and the resulting behaviours. (Al-Masry, 2012).

There are organic defensive mechanisms within the human body that help maintain a state of equilibrium, enabling it to cope with changes and return to balance once the conditions causing those changes subside. However, any external demand that disrupts this equilibrium, if the body fails to manage it, constitutes stress faced by the individual. (Salih et al., 2024) Cannon emphasized the role of the sympathetic nervous system, a division of the autonomic nervous system, for its critical function in preparing the body to confront various stressful situations. The purpose of Cannon's study was to elucidate the physiological role of stress and subsequently measure it under different conditions, ultimately identifying the body's internal balance. The following diagram illustrates this concept. (Malika, 2011).

Research has generally found that intrinsically flowing activities, characterized by engagement with the present moment, result in a sense of vitality in cognitive processes. (Le Bel and Dube, 2017).

Conclusions and Applications:

1. The cognitive load and mental fatigue scales are suitable for young 100-meter hurdles athletes and are appropriate for their intended purpose of measuring these two phenomena. Both scales meet the scientific criteria and standards required for acceptance in the field of sports psychology.
2. The practical applications of the psychological counselling program designed to reduce cognitive load and mental fatigue are well-suited for young 100-meter hurdles athletes.
3. Implementing the psychological counselling program contributes to reducing the level of mental fatigue among young 100-meter hurdles athletes.
4. It is essential to prioritize diagnostic psychological measurement and its applications for young 100-meter hurdles athletes to monitor their psychological state and address or mitigate psychological issues before they escalate.
5. It is necessary to consider the specific characteristics of the training and competitive environment of 100-meter hurdles athletes, as well as the specialized concepts of sports psychology, when designing appropriate psychological counselling programs for this category of youth.

Appendix (1) illustrates the cognitive load scale for 110-meter hurdles athletes.

No.	Item Statements	Always	Sometimes	Never
1	I feel incapable of handling embarrassing situations during training and competition.			
2	I tend to isolate myself from athletes who do not integrate into the training environment.			
3	I feel frustrated by the coach's limited reliance on my physical and technical abilities in running.			
4	I feel unlucky regarding the opportunities granted to me during training and competition.			
5	I believe that the training load and tasks in the sessions are not suited to my abilities.			
6	The coach's explanations and instructions annoy me.			
7	I support prioritizing practice and application over extensive explanation and guidance.			
8	I advocate for summarizing only the essential information regarding potential technical errors in competition.			
9	I believe that delving into detailed information about the competition is a waste of time.			
10	Detailed information about the competition disrupts my ability to continue updating my knowledge outside the training session.			
11	Paying attention to the coach's detailed explanations about competition conditions exhausts me.			
12	I find it difficult to distinguish important movement patterns when the coach extends the explanation of detailed information about performance in competition.			
13	I prefer self-directed practical application without the coach.			
14	I trust only my own ability to overcome common technical errors in running during competition.			
15	I believe that extensive diagnostic information for overcoming common running errors in competition requires clarity.			
16	I find explanations of technical error terms in running during competition tiring.			

17	Searching for common technical errors in running exhausts me.			
18	I feel apprehensive about the coach's information regarding my training condition.			
19	Repetition of information about how to overcome hurdles at high speed annoys me.			
20	I believe the coach focuses more on informational terminology than on practical applications.			

Appendix (2) illustrates the mental fatigue scale for 110-meter hurdles athletes.

No.	Item Statements	Always	Sometimes	Never
1	I feel that the variety of my training tasks creates psychological pressure during competition.			
2	I find it difficult to keep up with updates to my knowledge about the competition.			
3	I am bothered by the coach adding additional tasks alongside my regular training.			
4	I find it challenging to balance attending training sessions with my other life responsibilities.			
5	I feel that the coach is indifferent to the burden of the requirements imposed on me during regular training.			
6	I am frustrated by the inadequacy of training sessions in preparing me for the specific requirements of the competitions I am expected to participate in.			
7	I feel restricted by the centralized instructions from the coach and the club.			
8	I am drained by some of the illogical instructions issued by the coach and the club.			
9	I feel that the club's management is disconnected from the actual realities and requirements of competition levels.			
10	I believe that the club's management exploits my efforts for its own benefit in competitions.			
11	I feel frustrated by the planning and implementation of training sessions without assessing the development of my physical and technical running abilities.			
12	I feel that adhering to the schedule of training sessions strains my nerves.			
13	I feel that the burden of instructions during training has negatively impacted my social interactions.			
14	I am bothered by the coach's monitoring of updates to my technical knowledge in running.			
15	I am annoyed by the coach's unconsidered suggestions for improvement.			

16	I am annoyed by discussions among athletes during the time-allocated training session.			
17	I feel dissatisfied when the coach focuses on my knowledge about the competition.			
18	I feel embarrassed when I cannot answer other athletes' inquiries about the competition.			
19	I am bothered by the lack of interaction from the coach and athletes regarding the knowledge I possess about the competition.			
20	I feel that the duration of the training session is insufficient to provide the necessary knowledge about the upcoming competition.			
21	I find it difficult to understand the coach's continuous instructions and guidance.			

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Intensifying the exercise using a device to control the angles of muscle work in developing the chest muscles and maximum strength for bodybuilding players

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Abstract

The significance of the research emerged through the development of certain muscle groups (chest muscles and maximum strength) in the sport of bodybuilding, which requires intensive exercises using a device that controls the angles of muscle work. This device greatly contributes to creating a qualitative training breakthrough that aligns with the demands of bodybuilding by determining the movement path of the exercise to achieve the goal the researcher aims to explore in using the muscle angle control device. The focus is precisely on this in exercises to develop certain muscle groups (chest muscles and maximum strength) so that they harmonize with the development objective.

As for the research problem, there is fatigue or a drop in effort in specific parts during the exercise's movement path. This involves performing traditional exercises that have been in practice for many years across all bodybuilding exercises. The transition in the amount of effort exerted on the muscle along the range of motion for the involved body parts is required to address the state of fatigue and reduced effort in those parts, which demands greater muscle pressure in each exercise according to the working muscles. The result of this is to generate an intensification of the effort exerted on the muscle. Since the researchers work in training and development by supervising the

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training of many athletes practicing this sport, it was found important to move towards designing an innovative device that demonstrates control of muscle work angles in executing exercises. This is something not currently available in the Iraqi, Arab, or global training environments specialized in bodybuilding.

Keywords: exercise, angles of muscle ,maximum strength, bodybuilding

Introduction

The goal of developing training methods and techniques is to elevate athletic performance to achieve high levels of achievement in various sports. Consequently, the methods have diversified, and their effects have varied, prompting specialists and those involved in training to choose the best approaches that regulate training, improve technical performance, and develop players' capabilities. This is what coaches aim for in order to reach the same effort and technical performance required in competitions. Even when athletes reach higher levels, it still requires maintaining performance with nearly the same effort in most competitions.(Mousa & Kadhim, 2023)

Training with weights through intensive exercises to achieve competitive bodybuilding has many requirements, and the trainee must have the capacity to endure these somewhat strenuous exercises needed over long training hours. Often, we find a lack of noticeable physical progress, where the focus on muscle size may lead to neglecting other performance aspects, potentially resulting in injuries or delays in muscle development.(Mondher et al., 2023)

The development of certain muscle groups (chest muscles) in bodybuilding requires intensive exercises using a muscle angle control device, which significantly contributes to creating a qualitative training breakthrough that aligns with the demands of bodybuilding to develop certain muscle groups through intensive exercises. This is achieved by determining the movement path of the exercise to fulfill the training objectives and maintaining regular exercise. This is a challenging task that demands significant effort to reach higher levels and optimal performance during bodybuilding competitions.(HalahAtiyah et al., 2024)

The idea of the research emerged from the determination of one of the researchers, who is a star in bodybuilding locally and regionally, in consultation with other researchers to design a muscle angle control device for the challenging exercises aimed at developing important muscle groups. Therefore, the researcher established intensive exercises using the muscle angle control device.

From here, the importance of the topic the researcher intends to explore in using the muscle angle control device became evident, with a precise focus on exercises to develop and enhance certain muscle groups (chest muscles and maximum strength) so that they harmonize with the development objectives.(Khedir, 2018)

Problem Statement:

Bodybuilding has witnessed significant interest from enthusiasts worldwide, especially in the last decade. This is evident from the growing number of young people focusing on developing their muscle groups and showcasing them through weight training in specialized gyms. This study aims to provide a genuine solution to transforming the traditional movement patterns and performance that have been in practice for many years. The movement path of all exercises in bodybuilding involves the transition of the amount of effort exerted on the muscle throughout the range of motion for the body parts involved in the exercise. This leads to points of fatigue or reduced effort in specific areas during exercise performance.

Consequently, the researcher is motivated to address this issue and attempt to overcome it by constraining the athlete's movement during exercise within a path of movements with higher impact, avoiding periods of fatigue or decreased effort. This will exert greater muscle pressure in every exercise according to the working muscles, generating an intensification of the effort applied to the muscle. Since one of the researchers is a champion in this sport and works in training and development by supervising the training of many athletes practicing this sport, it was deemed important to design an innovative device that demonstrates control of muscle work angles in executing exercises. Such a device is currently unavailable in the Iraqi, Arab, or global training environments specialized in bodybuilding.

Research Objectives:

1. Design and manufacture a muscle angle control device.
2. Develop intensive exercises using the muscle angle control device to enhance chest muscles and maximum strength for bodybuilders.
3. Identify the impact of exercise intensification using the muscle angle control device on the development of chest muscles and maximum strength for bodybuilders.

Research Hypotheses:

1. Intensifying exercises using the muscle angle control device has a positive effect on developing chest muscles and maximum strength for bodybuilders, favoring the post-test results.
2. Intensifying exercises using the muscle angle control device has a positive effect on

developing chest muscles and maximum strength for bodybuilders, favoring the experimental group in the post-test results.

Definition of Terms:

Intensive Exercise is defined as “the absence of rest periods or the presence of short rest periods between attempts or repetitions, focusing solely on the movements to be learned” (Hammad, 2010, p. 215).

The researchers consider intensive exercise to be one that relies on either increasing the training load or reducing the assumed duration of normal training by constraining the athlete's movement during exercise within a path of movements with higher impact, thus avoiding periods of fatigue or reduced effort. This will result in greater muscle pressure exerted in each exercise, generating intensification in the effort applied to the muscle and achieving greater strength.

Materials and Methods

The researchers utilized the experimental method, “which is a path followed by the researcher to identify various conditions and variables related to a phenomenon and to control and manage them” (Farhan, 2015, p. 29). This includes designing two equivalent groups: the experimental and control groups, with pre-test and post-test measurements.

Research Community and Sample:

The researchers conducted their study on a sample from the community represented by specialized bodybuilding centers in Baghdad, with a weight range of (80-95 kg), consisting of (35) players participating in the Iraqi Championship in Baghdad for the 2022-2023 season. “This part represents the original community or is considered the model on which the researcher conducts his work” (Al-Kadhimi, 2012, p. 84). The researchers randomly selected their sample from the research community from some specialized centers participating in the Iraqi Championship in Baghdad through a lottery system, as shown in Table (1). They divided them into an experimental group consisting of (8) players and a control group consisting of (8) players.

Research Fields:

- Human Field: The human field consists of bodybuilders from specialized centers for the 2022-2023 season, totaling (35) players.
- Time Field: From 1/12/2023 to 7/2/2024.
- Spatial Field: Centers such as (True Gym), (Top Gym), and (Destroy Gym) for bodybuilding and fitness.

Table (1)

Shows the homogeneity of the research samples in weight, chronological age, and training age.

Measurements	Units of Measurement	Mean	Standard Deviation	Median	Skewness Coefficient
Weight	Kg	87,375	5,402	85,000	0,292
Chronological Age	Y	29,562	4,857	29,000	0,098
Training Age	Y	4,187	0,981	4,000	0,564

N=1

It can be observed from Table (1).

All skewness coefficient values were less than (± 1), indicating their homogeneity. The equivalence between the control and experimental groups in physical tests and body measurements will be calculated after they have been determined, selected, applied, and measured using the independent samples t-test, which will be detailed and explained in the pre-test.

Methods of Data Collection and Tools Used: Tools and Equipment Used:

Muscle Angle Control Device.

Dell brand laptop (Chinese-made).

Strength training equipment (free weights and machines).

20-meter fabric measuring tape.

Electronic Body Scale (TCS-200-RT).

iPhone (14) mobile camera for documentation.

Exercise benches.

A barbell with weight discs ranging from (2.5 kg - 25 kg).

Dumbbells of various weights from (2.5 kg - 25 kg).

Methods of Information Gathering:

Arabic and foreign sources.

The World Wide Web (Internet).

Personal interviews (see Appendix 1).

Observation.

The research team (see Appendix 2).

Tests and measurements.

Field Research Procedures: Determining Research Variables and Selecting Tests: After reviewing the sources and consulting among researchers, the researchers determined the variables being investigated, which are targeted by intensive exercises using the muscle angle control device aimed at developing certain muscle groups (chest muscles and maximum strength) suitable for the sample of the research.

Muscle Angle Control Device: This device is wireless and displays on a screen, aimed at measuring the range of motion angles during exercise at (0, 15, 30, 45, 90, 110). It provides an auditory signal and displays the angle on the screen wirelessly. It consists of either two pieces or one piece as follows:

First Piece: Muscle angle control device, which includes

A three-digit digital screen with specifications mentioned in materials.



Figure (1)

2. Two microcontrollers, IC number 16F873A.

3. One operational amplifier, LM3583.



4. Two lithium batteries. 3.7V. 2500mAh.
Additionally, one small lithium battery,



5. Two Type-C charging cards for the two
pieces.



Figure (4)

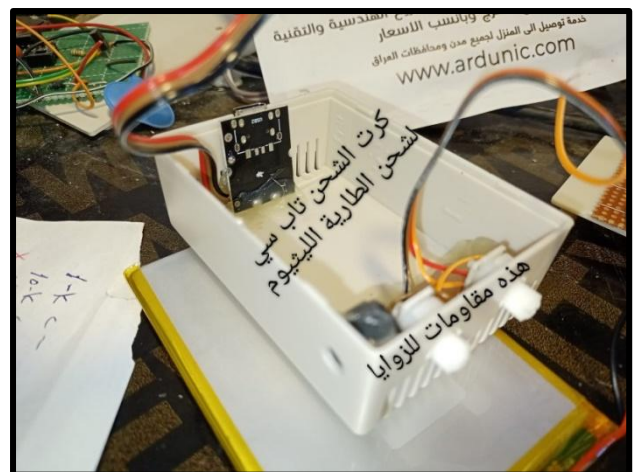


Figure (5)

6. Sound alarm, 12 volts.

7. Small Voltage Booster XL6009E1

1006

رافع فولت من 3.7 الى 12 فولت لتغذية الجهاز
بأكامل عدادات الخ.



Figure (6)

8. Gyroscope, model No. GY61, unlock.

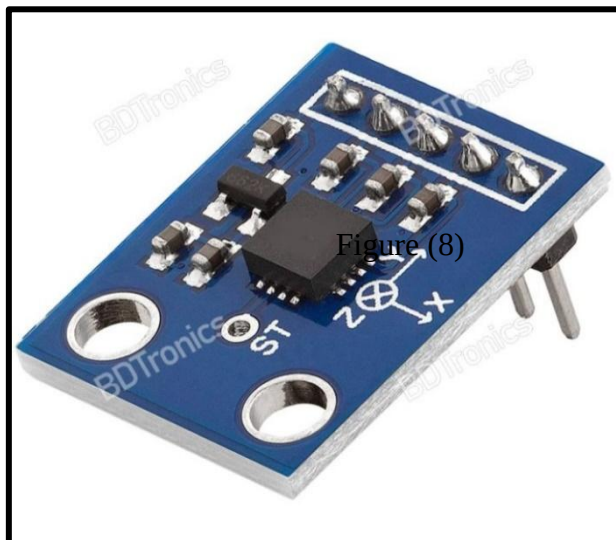


Figure (8)

10. Quarter-watt resistors for various general uses, dividers, and protection, etc.

Figure (7)

9- No bc337 transistor. Number 15.



Figure (9)

11. Various capacitors for filter usage and stabilizing readings naturally.



Figure (10)

12. Transparent black acrylic plastic interface.



Figure (11)

13-Two 315khz remote controls.

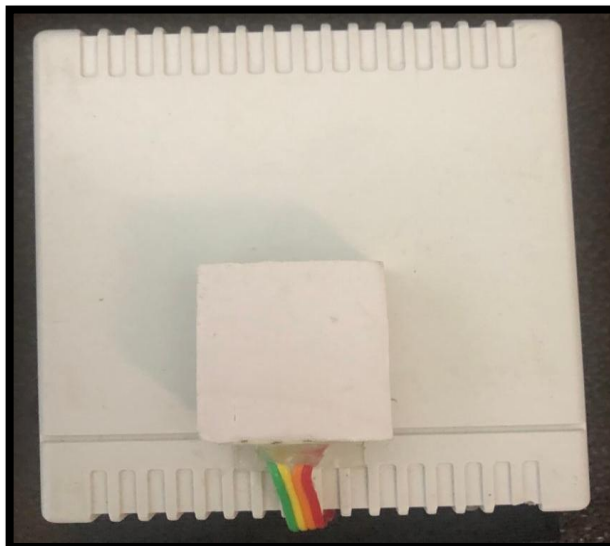


Figure (12)

14. Two remote receivers.



Figure (13)

15. A small plastic box to place on the foot or hand, containing the device materials for sending data to the digital screen.

Second Piece: Muscle Angle Control Device (auditory signal only): This device determines the starting angle and the ending angle of motion and is placed on the elbow or knee:

1. Flex sensor with a resistance of 10 kilo-ohms.
2. Microcontroller type PIC12F675.
3. IC type operational amplifier No. LM358 for sensor operation regulation.
4. Variable resistors, 10k ohms, number 2, to determine the starting and ending angles.
5. Small voltage booster that raises from 3.7V to...
6. Lithium battery 2000mAh to power the device.
7. Type-C charging card for charging the battery.
8. Small sound alarm, 5 volts.
9. Various resistors for multiple uses.
10. Multiple capacitors for filter uses, etc.
11. Voltage regulator type LM7805.
12. Small plastic box for assembling the components + small switch, ON/OFF.

First: Body Measurements (Chest Muscles)

The tests for the research were selected after agreement with the scientific committee and supervisors, as follows:

- 1- Test name: Bench Press (Allawi & Rizwan, 1994)

Purpose of the test: To measure the maximum strength of the arm muscles through forward pushing motion.

Equipment used:

1. A barbell weighing 20 kg.
2. Iron plates of various weights, ranging from 0.5 kg to 25 kg.
3. A bench specifically designed for the bench press exercise.

- Performance description:

After calculating the weight of the bar and plates in accordance with the player's capability, the player lies flat on the bench, holding the barbell with a grip width equal to chest width. The player then bends their arms down to chest level, pauses for two seconds, and then fully extends the arms.

- Scoring:

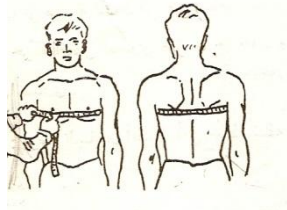
The player is given three attempts, and the highest weight from a single, legally performed attempt is recorded.



Figure 14 the maximum strength test for the chest and arm muscles.

Second: Body Measurements (Rizwan M., 1997).

Table 2 shows the forms of body measurements.

n	Test or measurement form	Name of the test or measurement
1	Chest circumference measurement – male	
2	Chest circumference measurement – male	

Pre-Tests

The researchers conducted a maximum strength test and pre-measurements before starting intensive exercises using a device for controlling muscle angle during chest muscle development for bodybuilders in the research sample.

The pre-tests were conducted on 8 players from the research sample on Friday, December 1, 2023, at 3:00 PM at True Gym, a specialized bodybuilding center, over one day. The tests included body measurements and the physical test (maximum strength bench press).

After performing the pre-tests for the research variables, the research sample was divided into two groups: 8 players for the experimental group and 8 players for the control group.

The researchers then calculated the equivalence between the two groups (experimental and control) in all physical tests and body measurements using the independent samples t-test, which shows that both groups (experimental and control) were equivalent in all physical tests and body measurements. This is evident since all calculated significance level values (sig) were greater than the adopted significance level (0.05), indicating the equivalence of the two samples, as illustrated in Table 3.

Table (3) shows the equivalence of the research groups.

n	tests	Experimental Group		Control Group		t- value	sig	Significa
		b	a	b	a			
1	Chest Circumference Male	116.7	5.83	114.5	5.05	0.7	0.4	Non- al
2	Chest Circumference Female	114.6	6.27	112.8	5.81	0.5	0.5	Non- al
3	Maxim Strength (Bench Press)	107.5	15.8	99.37	14.7	1.0	0.3	Non- al

The researchers implemented intensive exercises (training units) using a device to control muscle work angles, taking into account the following: the duration of the training unit, the goal of the training unit, the target muscles in the specific exercises, the training intensities used in the exercises, the number of sets and repetitions, and the rest intervals between sets and between exercises.

The researchers employed a hierarchical method and selected the maximum weight for each exercise and muscle. Based on this, the planned training intensity for the exercises was executed according to specific angles on the device.

$$\text{Target Weight} = \text{Maximum Weight} \times \text{Desired Intensity} / 100$$

Similarly, the maximum repetitions for each exercise were calculated as follows:

$$\text{Target Repetitions} = \text{Maximum Repetitions} \times \text{Desired Intensity} / 100$$

The researchers determined the number of training hours to be 8 weeks, with 2 training units per week, totaling 16 training units. They also set the start and end dates for the training. During each training unit, the researchers focused on one muscle group and targeted it in the training.

The exercises included the following:

- The exercises began on Tuesday, December 5, 2023, and ended on Monday, February 5, 2024.
- The duration of the exercises was 8 weeks, divided into 2 training units per week, totaling 16 training units.
- The number of exercises was 5 (see Appendix 3).
- The number of sets for each exercise was 3-4.
- The number of repetitions ranged from 8 to 12.
- The rest interval between sets was 30 seconds to 1 minute.
- The rest interval between exercises was 1-2 minutes.
- A hierarchical training method was used.
- The duration of the training unit was 45 to 60 minutes.

It should be noted that the movement path for the exercises was determined using the muscle work angle control device for the experimental group.

3-5-5 Post-Tests

After completing the specific exercises, the researchers conducted the post-tests on February 7, 2024, at 3:00 PM. The researcher repeated the same procedures as in the pre-tests at the same specialized centers and within the designated time for the research sample.

Statistical Methods

1. Mean.
2. Standard Deviation.
3. Skewness Coefficient.
4. T-test for paired samples.
5. T-test for independent samples.
6. Rate of Improvement = $\{(\text{Post-Test Mean} - \text{Pre-Test Mean}) / \text{Pre-Test Mean}\} \times 100$
(Dimitriou et al., 2002).

Results

presentation of the T-Test Results for Anthropometric Measurements and their Development Percentage for the Experimental Group in the Pre- and Post-Tests:

The results of the T-test for body measurements and the percentage of improvement for the experimental group in the pre-test and post-test are presented below:

Table(4)

**Means, Standard Deviations, and Calculated t-Values for the Pre-Test and Post-Test
in Body Measurements for the Experimental Group**

N	Tests	Pre		Post		GF	G H2	T	sig	assi
		b	a	b	A					
1	Chest umference ale	116.71	5.834	117.91	5.887	1.200	0.200	5.973	0.001	sign
2	Chest umference alation	114.60	6.277	116.11	6.197	1.512	0.314	4.814	0.002	sign

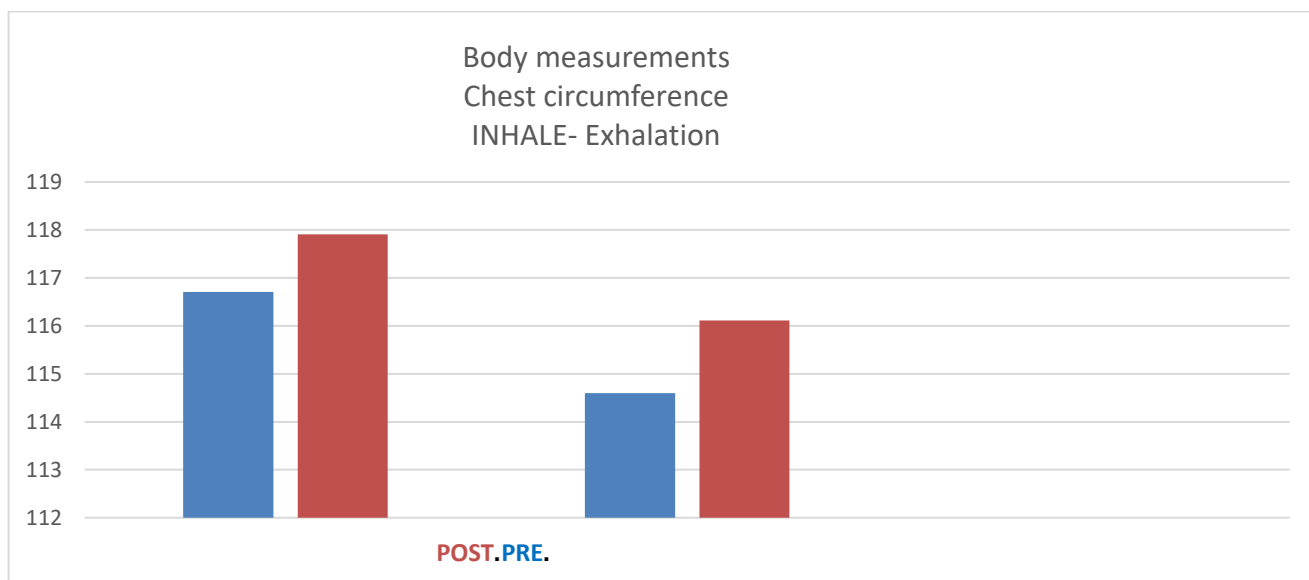


Figure (15) shows the pre- and post-arithmetic means of the experimental group in the body measurements test.

Presentation of the T-Test Results for Maximum Strength Test and its Development Percentage for the Experimental Group in the Pre- and Post-Tests:

Table (5) : Means, Standard Deviations, and Calculated T-Value for the Pre- and Post-Tests in Maximum Strength Tests for the Experimental Group

N	Tests	bre		post		GF	G H2	T	sig
		b	a	b	a				
1	Maximum Strength Test (Bench Press)	107.50	15.811	120.625	15.683	13.125	1.619	8.104	0.001

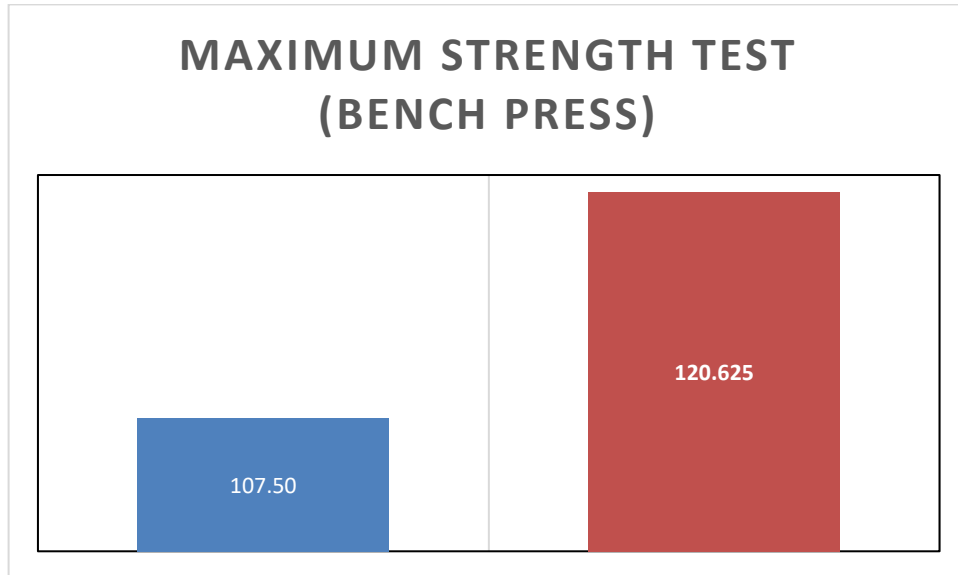


Figure (16) : This figure illustrates the means (arithmetic averages) of the pre- and post-test results for the experimental group in the maximum strength tests.

Presentation of the T-Test Results for Anthropometric Measurements and their Development Percentage for the Control Group in the Pre- and Post-Tests:

Table (6): Arithmetic means, standard deviations and calculated (t) value for the two tests (pre- and post-test) in body measurements for the control group

N	Tests	Pre		Post		GF	2 F	T	sig	assime nt	Devlop ng raito
		b	a	b	A						
1	Ch est ferenc nhale	114.56	5.052	114.8 62	5.020	0.30 00	0.0 73	4.0 99	0.0 05	signific ant	0.26%
2	Ch est ferenc halation	112.87	5.811	113.3 12	5.827	0.43 7	0.1 37	3.1 82	0.0 15	signific ant	0.39%

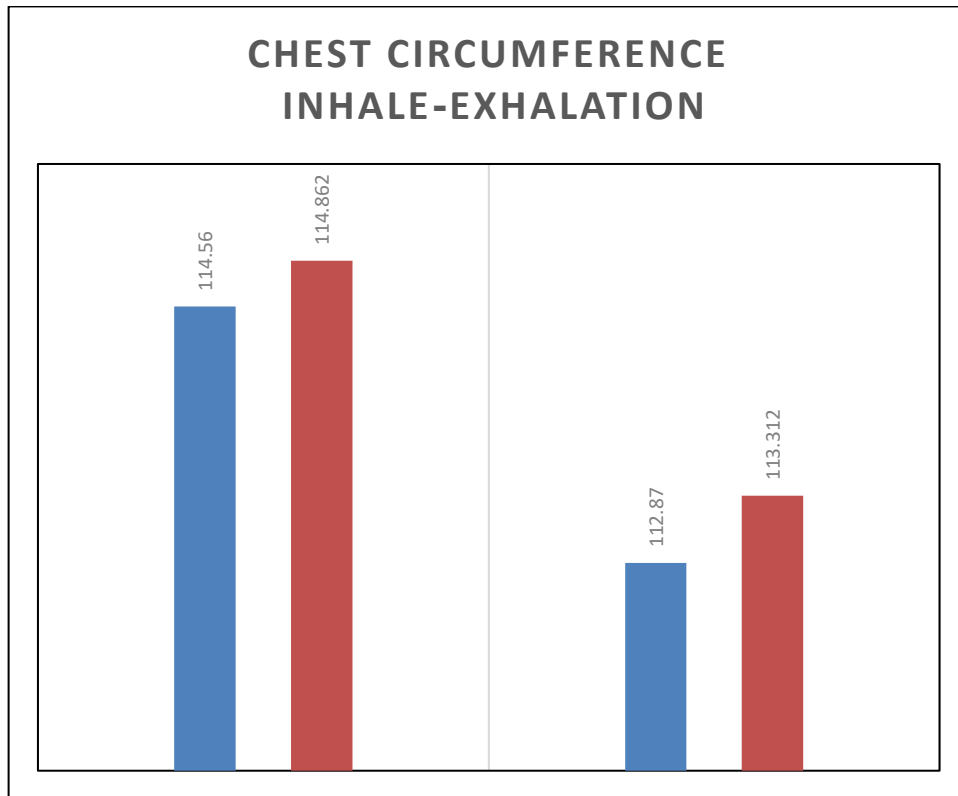


Figure (17) shows the pre- and post-arithmetic means of the control group in the body measurements test.

Presentation of the T-Test Results for Maximum Strength Test and its Development Percentage for the Control Group in the Pre- and Post-Tests:

Table (7) : Means, Standard Deviations, and Calculated T-Value for the Pre- and Post-Tests in Maximum Strength Tests for the Control Group

N	Tests	bre		post		G	G	T	si	assim	Devlo rait
		b	a	b	a						
1	Maxi Strength (Bench s)	99.	14.	102.	13.	3.	1.	2.	0.	signif	3.45

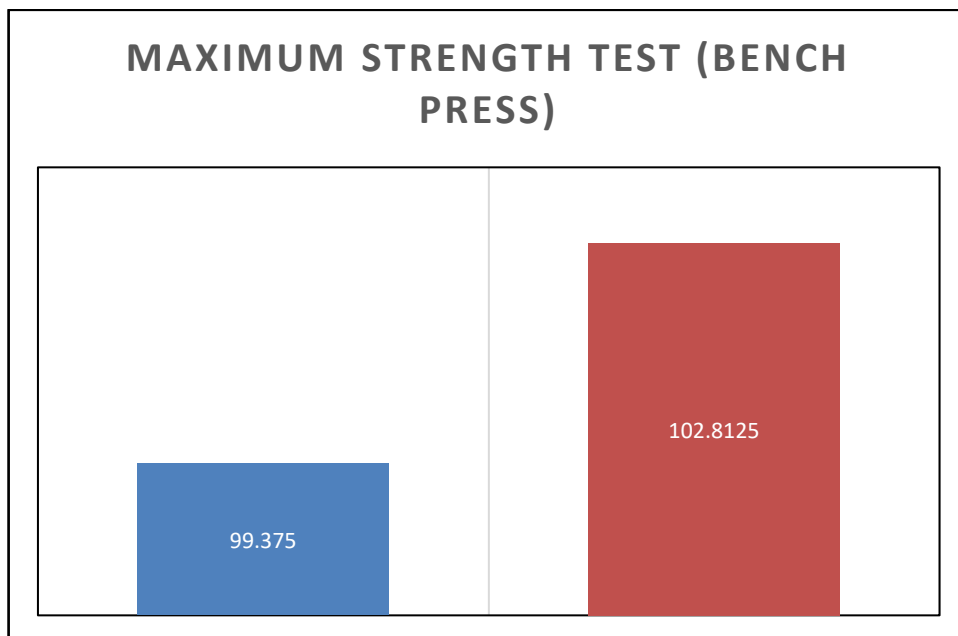


Figure (18) shows the pre- and post-arithmetic means of the control group in the maximum strength tests.

Presentation of the maximum strength tests of the control group in the pre- and post-tests:

Table (8): Means, Standard Deviations, and Calculated T-Value Between the Experimental and Control Groups in the Post-Tests for Anthropometric Measurements

N	Tests	Experimental		Control		T	sig	assiment
		b	a	b	A			
1	Ches umferen nhale	117.9	5.88	114.8	5.02	1.11	0.28	unsignific
2	Ches umferen alation	116.1	6.19	113.3	5.82	0.93	0.36	unsignific

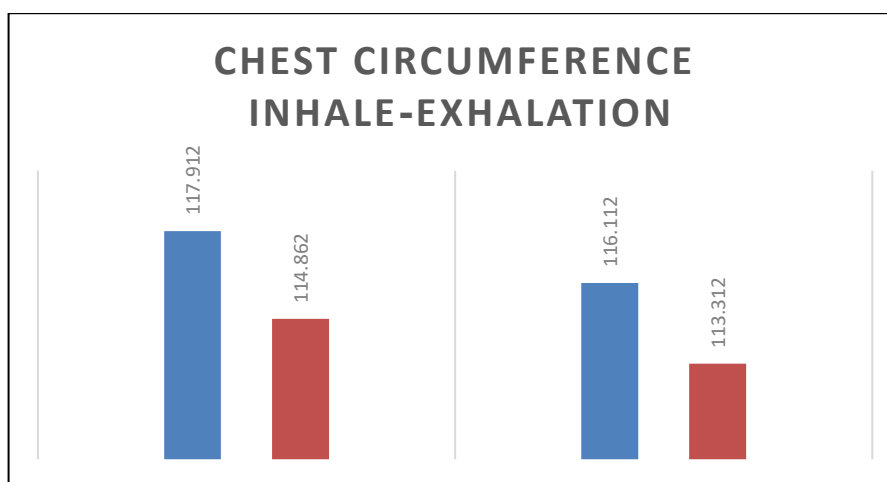


Figure (19) shows the arithmetic means of the experimental and control groups in the post-tests of the body measurements.

Table (9): Comparison of the Development Percentage Between the Experimental and Control Groups in Anthropometric Measurements Test

N	Tests	Experimental	Control
1	Chest circumference male	1.02%	0.26%
2	Chest circumference alation	1.31%	0.39%

presentation of the T-Test Results for Maximum Strength Tests of the Experimental and Control Groups in the Post-Test:

Table (10): Means, Standard Deviations, and Calculated T-Value Between the Experimental and Control Groups in the Post-Tests for Maximum Strength Tests:

N	Tests	exprimental		controlled		T	sig	assimen
		b	a	b	a			
1	Maxim Strength (Bench ss)	120.6	15.6	102.8	13.8	2.4	0.0	signific

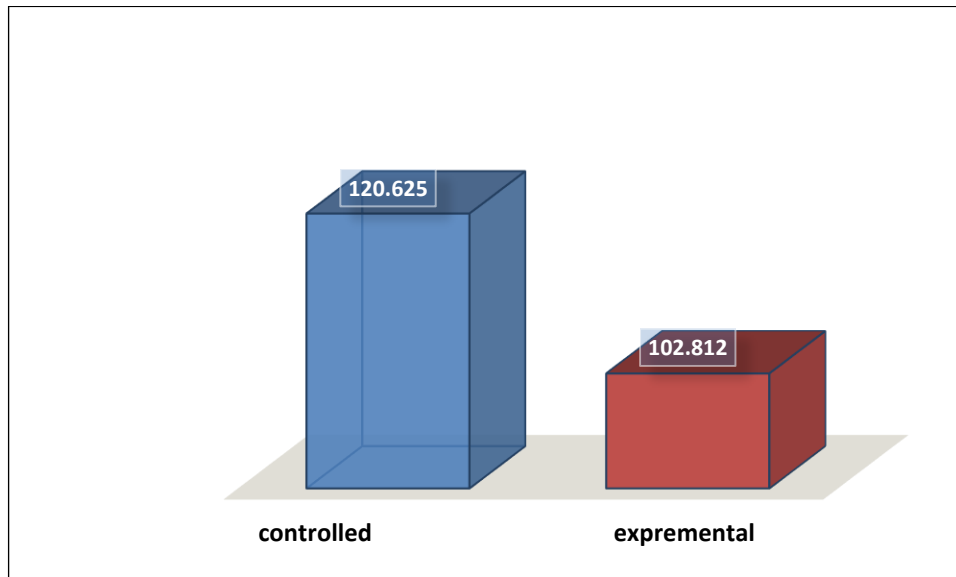


Figure (20): Comparison of Arithmetic Means for the Experimental and Control Groups in the Post-Tests for Maximum Strength

Table (11) shows a comparison of the rate of development between the experimental and control groups in the maximum strength tests.

N	Tests	Experimental	Control
1	Maximum Strength t (Bench Press)	3.45%	12.2%

Discussion

Discussion of the Anthropometric Measurements of the Experimental Group in the Pre- and Post-tests:

Based on Table (4) and Chart (15), the results of the anthropometric measurements for the experimental group in the pre- and post-tests show significant results in all aspects. Researchers emphasize that the adherence to the intensive exercises in question has yielded positive results in terms of the chest circumference, which is a crucial factor in bodybuilding, as it reflects the amount of muscle density achieved through intensive training. This is supported by Nouri Ibrahim Al-Shouk, who stated that "Anthropometric measurements are among the most important indicators for selecting athletes, as they are the foundation upon which athletes reach higher levels" (Al-Shouk, 1996, p. 13). These positive results are attributed to the precise and calculated adherence to intensive training over a period of 60 days. This resulted in noticeable changes in the chest circumference, as confirmed by Marwan Abdul Hamid, who noted that "Sports training is one of the factors leading to anthropometric changes in the athlete's body. Engaging in any type of sports activity regularly and

over a long period results in physical changes in accordance with the nature of that activity" (Abdul Hamid, 1999).

Chest circumference is one of the essential anthropometric measurements, reflecting the physical condition of the athlete. Continuous measurements help track the progress and improvements resulting from intensive training on the body's structure. Muscle cross-sectional area is one of the most influential factors in strength. This is confirmed by Risan Khuraibit and Ali Turki, who stated, "Increased muscle mass (circumference) is associated with increased strength, especially maximum strength. Muscle hypertrophy is reflected in the increase in the muscle's cross-sectional area, where an increase of 1 cm² in men leads to an increase in muscle strength by 7–12 kg" (Khuraibit & Turki, 2002, p. 75).

As for the measurement of chest circumference (inhalation and exhalation), it reflects the functional condition of the athlete, particularly in bodybuilding. During competition, athletes need to achieve maximum inhalation and exhalation, holding their breath for the longest possible time. The purpose of this is to emphasize the body's structure and muscular development through various poses.

The athlete takes a deep breath to demonstrate and highlight the expansion of the rib cage, evident in the front and back lat spread, as well as in the front and rear double biceps poses, and in the side poses. In contrast, the maximum exhalation performed by the athlete while displaying bodybuilding poses serves to highlight the muscles of the waist area through the contraction of the abdominal muscles, aiming to showcase the muscular leanness of the waist, which is emphasized in the abdominal poses from the front and side.

Discussion of Maximum Strength for the Experimental Group in the Pre- and Post-Tests:

Researchers attribute the superior results of the post-test over the pre-test in terms of maximum strength, as shown in Table (5) and Chart (16), to the intensive exercises employed by the experimental group. These exercises involved high-intensity movements with a wide range of motion, which had a positive effect on the outcomes achieved by the group. This is particularly beneficial in bodybuilding, where the performance technique helps to guide the movement's path, allowing more space within the muscle fibers to absorb greater amounts of protein and adaptations. These adaptations are what bodybuilders strive for. This is supported by Adel Abdel Basir, who states, "Every set of exercises should be designed to have a strong impact in developing adaptations for the specific abilities required by the type of activity" (Abdel Basir, 2006, p. 108). The term "exercise intensification" refers to muscles being subjected to resistance along the full range of motion, influenced by supportive techniques to achieve the desired outcomes of these exercises.

Additionally, the muscle angle control device had a clear impact through the precision it provided in defining the movement path of the exercise. This resulted in greater exercise intensification, which is emphasized by Kamal Al-Rabadi, who says, "Devices, tools, and equipment

have become essential for any training team and coach alike, to assess the athlete's level, capabilities, progress, and the time required for development. The coach can use this information to determine the necessary training doses to improve performance" (Al-Rabadi, 2005, p. 8).

The method of intensifying training using the muscle angle control device adds to the strength of contraction more effectively than other methods. This includes the high-frequency transmission of nerve impulses, as well as additional energy generated by stimulating the soft tissues in the ligaments, joints, and tendons. This added energy itself leads to relative increases in maximum strength, thereby enhancing the muscles' efficiency in lifting heavier weights .

In bodybuilding, there is a strong connection between strength training and the continuous pursuit of muscular adaptations. As maximum strength increases, muscle mass increases as well. Maximum strength is used with varying training loads in bodybuilding, aiming to achieve specific muscular adaptations, such as hypertrophy.

The use of maximum strength in bodybuilding is essential for achieving muscular adaptation, as high-intensity strength exercises are commonly employed, especially during the general preparation phase when athletes need to build significant muscle density. This is achieved through the use of a pyramid system, with gradual increases in intensity based on training methods and other foundational principles.

-Discussion of the Anthropometric Measurements for the Control Group in the Pre- and Post-Tests:

From Table (6) and Chart (17), it is clear that all anthropometric measurements for the control group showed statistically significant differences between the pre- and post-tests, with the post-test results being superior. Researchers attribute these improvements to the training program designed by the coach and implemented by the control group, which had a positive impact on developing the anthropometric measurements of bodybuilders in specialized centers.

However, it should be noted that while the coach played a key role in the progress made by the players through diligent training, the improvements did not reach the same level of statistical significance as those seen in the experimental group. This aligns with what Dua A'id emphasizes, stating that "The method used allows the coach to control the intensity of the exercises and the rest intervals between repetitions and between different training sessions" (Al-Ta'i, 2014, p. 113).

This suggests that while the control group benefitted from a structured training program, the experimental group's intensive and specialized training led to more pronounced physical development.

- Discussion of Maximum Strength Tests for the Control Group in the Pre- and Post-Tests:

From Table (7) and Chart (18), it is evident that the maximum strength test for the chest showed statistically significant differences between the pre- and post-tests, with the post-test results being superior. Researchers attribute this improvement to the non-intensive regular training program designed by the coach, which successfully developed the control group. However, the development was less significant compared to the experimental group, which followed a more intensive training regimen.

- Discussion of T-Test Results for the Anthropometric Measurements of the Experimental and Control Groups in the Post-Test:

To compare the post-test results of the anthropometric measurements between the experimental and control groups and to determine which group showed greater improvement, a T-test was conducted for the two independent (non-correlated) groups, which were equal in number. This test aimed to determine the statistical significance of the differences between the two groups, as shown in Table (8).

The analysis will reveal which group experienced greater improvements in physical measurements, providing insights into the effectiveness of the different training programs used.

- Discussion of T-Test Results for Body Measurements of the Experimental and Control Groups in the Post-Test:

It is evident from Table (8) and Chart (19) that all the results between the experimental and control groups in the post-tests for anthropometric measurements were statistically non-significant. Researchers attribute this to the difficulty of achieving statistically significant results within a two-month training period, especially since the research sample consisted of advanced players in specialized centers. While there may be physical development, it does not show statistically because these athletes already have substantial muscle mass and size, which can increase, but the changes are too subtle to be captured statistically. (Kadhim et al., 2021)

If the research sample had included beginner athletes, there would have been more noticeable development in anthropometric measurements, as beginners typically experience rapid physical improvements at the start of their training. This aligns with the findings of Isra'a Fouad and Suhad Qasim, who state that "the rapid development in the level of training condition occurs at the beginning of the training journey, but then it progresses more slowly and becomes more difficult" (Saleh Al-Wais & Saeed Al-Moussawi, 2016, p. 90).

Looking at Table (9), which shows the development percentages between the experimental and control groups in the post-tests for anthropometric measurements, we observe that both groups exhibited progress. However, the experimental group showed a greater level of development compared to the control group. Researchers attribute the superiority of the experimental group to the intensive training using the muscle angle control device, which provided focused and intensive

training, keeping the muscles under constant tension without rest periods. This is reinforced by Ya'rub Khayyoun, who states that "intensive training involves minimal or no rest periods between attempts or repetitions of the movements being learned" (Khayyoun, 2002, p. 84). This had a positive impact on muscle development, particularly in terms of the increase in the cross-sectional area of the muscle, as supported by Rula Maqdad and Ali Ahmed, who emphasize that intensive training affects most physiological variables and contributes to their effective development (Ubaid & Najib, 2015, p. 4).

- Discussion of T-Test Results for Maximum Strength Tests of the Experimental and Control Groups in the Post-Test:

From Table (10), Figure (20), and Table (11), it is evident that the experimental group outperformed the control group in the post-tests for maximum strength of the chest muscles. This superiority is attributed to their commitment to employing intensive exercises using the muscle angle control device in a precise and methodical manner. The results clearly demonstrate the positive impact of these exercises.(Kareem, 2023)

Researchers attribute this development to the device and the athletes' adherence to regular and rigorous training with varied ranges of motion and training intensity. The enhancement in maximum strength for the experimental group holds significant importance for bodybuilders aiming to achieve muscular hypertrophy, which contributes to an increase in muscle diameter.(Mondher et al., 2023)

Additionally, the structured and consistent intensive training played a crucial role in the balanced development of the targeted muscle groups, achieving uniform growth. As stated by Mahdi Kazem, "maximum strength refers to the highest level of force that muscles exert against high-resistance loads, which is a crucial requirement for many sports activities, especially strength-related activities such as weightlifting, bodybuilding, and wrestling" (Ali, 1999, p. 28) .

One of the factors leading to the experimental group's success is the training angle and movement level utilized by the researchers in training and hypertrophying muscle fibers. The specific angles employed in performing the exercises made the training more intensive. Over a period of 60 days, the researchers implemented exercises using the angle control device, resulting in significant positive outcomes in maximum strength tests by ensuring the correct angles for intensive exercises.(Kadhim, 2023)

Conclusions

In light of the results obtained, the researcher has drawn the following conclusions:

- 1 .The effect of exercise intensification using the muscle angle control device has positively influenced the development of body measurements for all targeted muscles.
- 2 .The intensification of exercise using the muscle angle control device has positively impacted the maximum strength of the targeted muscles.
- 3 .The use of non-intensive exercise contributes to the development of body measurements and maximum strength; however, relying on intensive exercise leads to greater development.

Recommendations:

Based on the conclusions reached, the researcher recommends the following, It is essential to employ the method of exercise intensification using the muscle angle control device.

Appendix

Appendix (1): Personal Interviews Conducted by the Researcher with Experts and Specialists

n	name	Specialization	Workplace
1	Prof. Dr. Ali Shabut Ibrahim	Biomechanics/Weightlifting	University of Baghdad\College of Physical Education Sports Sciences
2	Prof. Dr. Mustafa Saleh ndi	Training/Weightlifting	University of Baghdad\College of Physical Education Sports Sciences
3	Prof. Dr. Yasser Najah ssein	Biomechanics/Gymnastics	University of Baghdad\College of Physical Education Sports Sciences
4	Prof. Dr. Ahmed Farhan Al- nimi	Training/Wrestling	University of Baghdad\College of Physical Education Sports Sciences

5	Prof. Dr. Huda Hamid Abdul sein	Biomechanics/Basketball	University of ghdad\College of sical Education Sports Sciences
6	Prof. Dr. Muayad Jassim bas	Training/Weightlifting	University of ghdad\College of sical Education Sports Sciences
7	Assistant Professor Dr. assan Adeeb Abdul Hassan	Training/Weightlifting	University of ghdad\College of sical Education Sports Sciences
8	Dr. Zain Mohammed Hassan n Al-Abidin	Biomechanics/Basketball	Al-Farahidi iversity/College of cation/Department Physical Education Sports Sciences
9	Assistant Professor Haider hid	Training/Bodybuilding	Iraqi National eration for lybuilding and ness

Appendix (2): Names of the support team

n	name	Specialization	Workplace
1	Dr. Zain Mohammed Hassan n Al-Abidin	Biomechanics/basketball	Al-Farahidi iversity/College of cation/Department Physical Education Sports Sciences
2	Ammar Kamel Nasser	Master's Student/College Physical Education and rts Sciences	

3	Saad Abdulrahman Mohsen	Bodybuilding Coach	
4	Muntather Abdulrahman Mohsen	Bodybuilding Coach	
5	Abdulkarim Saad Abdulrahman	Bodybuilding Coach	
6	Abdullah Rafid Jawad	Bodybuilding Champion	
7	Hassan Saad	Bodybuilding Champion	
8	Salman Muwaffaq	Bodybuilding Champion	
9	Abdullah Alaa Al-Obaidi	Photographer	

Appendices (3)

Exercise 1

Exercise name: High bar press (high bar bench press)

Exercise description: (Bending and extending the arms with the bar from a lying position on the highest bench)



Elbow joint angle at the end of the exercise (145-155) degrees

Exercise 2

Exercise name: Bench press upper dumbbell (Bench press upper dumbbell)

Exercise description: (Bend and extend the arms with the dumbbell from a lying position on the highest bench)



Elbow joint angle at the end of the exercise (140-150) degrees

Exercise 3

Exercise name: Flat bar press (Bench press flat bar)

Exercise description: (Bend and extend the arms with the bar from a lying position on a flat bench)



Elbow joint angle at the end of the exercise (145-155) degrees



Exercise 4

Exercise name: Flat dumbbell press (Bench press flat dumbbell)

Exercise description: (Bend and extend the arms with the dumbbell from a lying position on a Lying on a flat bench)



Elbow joint angle at the end of the exercise (140-150) degrees

Exercise 5

Exercise name: Bench press (Bench press bar down)

Exercise description: (Bending and extending the arms with the bar from a lying position on the bench tilted down) Elbow joint angle at the end of the exercise (145-155) degrees

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The effect of axial stability exercises with dynamic contraction on the electrical activity of the rectus femoris muscles and the accuracy of shooting from a fixed position with a basketball

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Abstract

The research aimed to prepare pivotal stability exercises with moving contraction for young basketball players, and to identify the effect of pivotal stability exercises with moving contraction on the electrical activity of the rectus femoris muscles of basketball players, and to identify the effect of pivotal stability exercises with moving contraction on the accuracy of shooting skill from a fixed position with a basketball. The boundaries of the research community were represented by young basketball players at Al-Karkh Sports Club, whose total number is (14) players, who are continuing their training for the sports season (2023/2024). The research sample was deliberately selected from them using the comprehensive enumeration method at a rate of (100%) of their original community. After determining the measurement tools, (24) training units were prepared for pivotal stability exercises with moving contraction, as they were applied over a period of (8) weeks at a rate of (3) training units per week, and the experiment was conducted during the special preparation period for the sports season (2023/2024), as the experiment began by applying the pre-tests on Sunday corresponding to the date (12/3/2023), and then applying these exercises to the experimental group players for the period from Monday corresponding to the date (12/4/2024) until Wednesday corresponding to the date (1/24/2024), and completing this experiment by applying the post-tests on Thursday corresponding to the date (1/25/2024), and the results were processed using the (SPSS) system to be the conclusions and recommendations that preparing the pivotal stability exercises with the moving contraction and applying them is suitable for young basketball players, and that applying

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them helps improve the level of the electrical signal (EMG) by increasing the level of the peak and decreasing the area, and helps improve the level of shooting accuracy from a fixed basketball for young basketball players, and it is necessary when preparing pivotal stability exercises with the moving contraction when training shooting accuracy from a fixed basketball to adopt the principle of experimentation in that the point of influence is on the leg muscles to increase the level of neuromuscular control for the stability of muscle contraction in the two thigh muscles, and it is necessary to take into account not to exaggerate in increasing the allocated time For core stability exercises in the main part of the training unit, take into account the balance of training with the other muscles of the body.

Keywords: axial stability exercises, dynamic contraction, electrical activity, fixed position, basketball

Introduction

Exercises with moving contraction are exercises that target the coordination of the body's total muscles by placing the player in a position of moving balance, especially when the exercises focus on neuromuscular work. The (Spiral Line) muscles (spiral fascia) are necessary and important for young basketball players because of their association with maintaining posture and balance and increasing the effectiveness of the electrical signal to the muscles therefore to produce various capabilities, especially the skill of shooting from a standing position. Also, every training intensity and training load has repercussions represented by internal physiological reactions to meet the requirements of that load, and this requires studying it in the field in order to achieve the required improvements.

"The vestibular apparatus is the organ that detects the sensations of balance and consists of a group of bony tubes and chambers located in the petrous part of the petrous bone called (the bony labyrinth) within which there is a group of membranous tubes and chambers called (the membranous labyrinth) and this is the functional part of this apparatus, and there is a gelatinous spot in this apparatus that contains a number of small calcium carbonate crystals called (balance dust) and there are thousands of hair cells in the spot and the bases of these cells and their ends are intertwined with the sensory endings of the vestibular nerve, and other factors affecting balance: deep sensory receptors in the neck, and visual information." (Arthur & John 2020, p: 12)

"Exercises must take into account the rules of balance, whether in performance or stability, and support the improvement of balance by relying on increasing the activation of the widespread muscle sensors, because the vestibular system does not develop with training, as it is like a scale that informs the brain about the body's positions without issuing orders. This confirms that the role of the vestibular system is informative and not controlling, as is the prevailing idea, and it is possible to improve the effectiveness of its neurophysiological work, not develop. its structures." (Arthur, 2001, p: 151)

Also "worth noting that diversifying exercises and including different components of physical fitness in the training program can have a greater positive effect on the results." (Faigenbaum & Myer, 2016, p: 15)

Axial stability exercises also involve the brain's ability to regulate the signals and receptors of the nerve fibers that carry signals to the Spiral Line muscles and regulate them in the same muscles. These are also essential biochemical processes, and exercise training may improve that function." (Silva & Araujo, 2010, p: 339)

"Exercises targeting the Spiral Line muscles help strengthen and stretch the trunk in a way that suits the transfer of muscle power to the limbs. It is logical to train muscles in isolation, especially if the muscles of the largest part of the body are the back muscles, which require a focus that suits the goal and direction of the exercise." (McGill & Others, 2009, p: 121)

"The tools for axial stability exercises differ in terms of their material or their effect on body balance. They are of the following types: sponge tools, such as a thick, highly flexible mat that makes the individual feel that its flat surface is soft; rubber tools, which are in the form of figures that players walk on; large Chinese rubber balls filled with air; And solid plastic and wooden tools with a narrow base and a wide surface." (Frizzell & Dunn, 2015, p. 406)

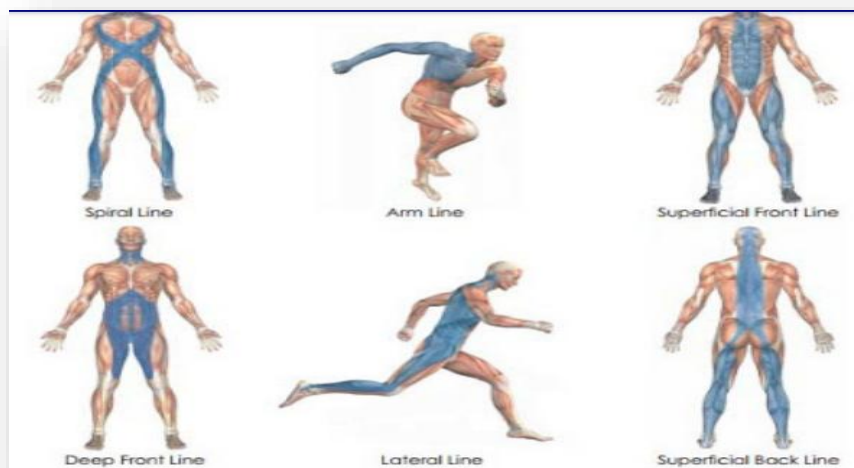


Figure (1) shows pictures of some models of the spiral line muscles.

Targeted by core stability exercises

Core stability exercises used to improve balance include tightrope walking, one-legged standing, tremor exercises, dynamic balance exercises, deep breathing exercises, and meditation. If you feel pain or fatigue, you should reduce the intensity or stop the exercise. (Amal, 2018, p. 13)

The researcher believes that according to the physiological principle that movement in skill performance in basketball depends on three types of contractile work, which are the active, the opposing and the fixing, as is known, it is possible to rely on this in supporting the principle of muscle synergy and the principle of transferring forces between parts of the body by means of training the large muscles and knowing its positive reflections on the contractile work of the smaller muscles, and here the coach must choose the appropriate training methods well in accordance with the Axial stability training in targeting the moving

muscle work to serve the fixed muscle work in the leg muscles that support the player's stability when performing spatial accuracy in scoring from a fixed position.

It is also required that “when using balance tools in exercises, we be careful not to exaggerate the disturbance of the balance base to the extent that it requires movements that exceed the individual's ability and level of muscle strength and his ability to react to the motor.” nerve to control the confusion of the posture, which in this case would cause more harm than benefit from using them.” (Cawley & Others, 2003, p. 553)

Although the subject seems to be related to the control of the path of the muscle group (Spiral Line) (spiral fascia) around the body to influence the muscle synergy to maintain the moving balance and be affected by it, which is known as "neuromuscular" control to balance the Earth's gravity during movement and rotation, as the importance of the inner ear enters into this according to its internal structure through a group of nerve sensors to determine the location of the body in relation to the Earth's gravity, where the balance nerve that comes out of the inner ear with the auditory nerve gives signals to the central nervous system to determine the location and adjust the position of the body while standing when not moving and the signals are equal, but in any simple movement, the signal of one side increases Compared to the other or during movement from front to back of the head in addition to the feeling of falling with a change in speed.” (Belkacem, 2017, p. 29)

“Muscular balance on both sides of the body is the actual basis for good posture, and it adjusts the shape of the body from its current position to the ideal position it should be in.” (Muhammad, 2020, p. 28)

The researcher believes that maintaining balance for a basketball player requires him to coordinate between the muscle contractions of the various muscles of the body and increase the neuromuscular control that ensures that he maintains his posture, especially during rotational movements and repeated quick jumps according to the needs of the competitive situation in the matches. This does not require strengthening the leg muscles and achieving the physiological responses in the electrical neuromuscular control in a manner that is consistent with achieving these goals.

As “researchers were able to obtain important physiological information and facts that contributed to the development of sports training.” (Omar, 2018, p. 10)

To elaborate on this, “after the signal arrives and acetylcholine is secreted, sodium ions are released and a potential difference occurs, which flows along the muscle fiber membrane in the same way that action potentials flow along the nerve cell membranes. At this moment, calcium ion stimulation begins to be released, which was stored in the network, and is released to the muscle fibers. Calcium ions work to generate attractive forces between actin and myosin filaments.” This leads to the formation of transverse bridges and then their sliding over each other. We notice that the membrane at this stage becomes highly permeable to sodium ions, allowing large numbers of them to flow into the axon and lose the state of polarization represented by an amount of (-90 millivolts) with a rapid rise in the voltage towards the positive direction, which is called depolarization. In fact, the membrane

action potential in large nerve fibers exceeds the zero limit and becomes slightly positive, but in some small fibers and in many neurons of the central nervous system, the voltage reaches the zero limit only and does not exceed the positive voltage. All this happens within a molecule of a thousandth of a second. After the membrane becomes highly permeable to sodium ions, which continues for a fraction of a thousandth of a second, the sodium channels begin to close and the potassium channels open more than their normal state, and then the rapid diffusion of potassium ions returns to the outside, which is called membrane repolarization (depolarization stage), as calcium ions are pumped back into the sarcoplasmic reticulum to begin the state of relaxation. (Gyton & Hall, 2020, p. 91)

“When the electrical charge reaches the cross-bridges in the myofibril, it activates the myosin heads to bind to actin, while the myosin heads change their activated arrangement, which removes them, which causes the heads to be pulled from the myofibril, thus passing towards the center of the sarcomere. This action represents the electrical strike of the cross-bridge cycle.” (Ryan, 2018, p:108)

can be summarized as follows: “Motor area in the brain = nerve impulse = anterior horn of the spinal cord = motor nerve source = motor nerve terminal plate = acetylcholine reactions = modification of the polarity of the muscle fiber membrane = generation of a positively charged electrical potential = interpenetration of fibers within the muscle fiber.” (Mohamed, 2000, p. 34)

The researcher believes that the basketball coach must have a broad knowledge of the mechanisms of muscle contraction to include increased neural control in muscle contractions for various exercises aimed at improving or increasing the peak of the electrical signal (EMG) according to the specificity of the contraction, meaning that he must be familiar with the physiological reactions to each exercise targeting the (Spiral Line) muscles (spiral fascia) when working to develop the contractile work of the leg muscles.

“Sports training is the result of that interconnected mixture of different sciences, and perhaps the reason is that this science aims to advance the development of human physical performance to achieve the highest athletic levels” (Wagdy, 2018, p. 5).

From the aforementioned literature applied on the correlation between the variables studied for both the training and physiological aspects in basketball within this training environment, through the researcher's academic work in the physiology of basketball training for this game and through repeated field visits to training for young players At Al-Karkh Sports Club for Basketball, she noticed that the player's focus on the skill of shooting from a fixed position when performing the free throw has a kind of instability in the leg muscles, which negatively affects his accuracy in directing the ball towards the board to achieve the point or enter it into the ring, thus affecting the team's result in losing balls and points, which this research sought to answer the following questions: □ Can axial stability exercises be applied? By moving contraction For young basketball players?

□ Can axial stability exercises affect By moving contraction In contractile work in youth basketball players?

□ Can axial stability exercises affect Moving in accuracy of shooting from a stationary basketball For young basketball players?

The aim of this research is to prepare axial stability exercises with moving contraction for young basketball players, and to identify the effect of axial stability exercises with moving contraction on the electrical activity of the rectus femoris muscles of basketball players, and to identify the effect of axial stability exercises with moving contraction on the accuracy of the skill of shooting from a standstill with a basketball, so that the research hypotheses are that there are statistically significant differences between the results of the pre- and post-tests of the experimental research group in measuring the peak and area of the electrical signal (EMG) of the rectus femoris muscles, there are statistically significant differences between the results of the pre- and post-tests of the experimental research group in the accuracy of the skill of shooting from a standstill with a basketball.

Method and procedures:

The problem of the current research imposed that the researcher adopts the experimental research method by designing an experimental group with tight control in the pre- and post-tests. The boundaries of the research community were represented by young basketball players in Al-Karkh Sports Club, whose total number is (14) players, who are continuing their training for the sports season (2023/2024). The research sample was deliberately selected from them using the comprehensive enumeration method at a rate of (100%) from their original community. To measure the peak and area of the electrical signal (EMG) of the rectus femoris muscles, I used the test (Appendix 1) with a measurement unit of (millivolts/second), and to measure the accuracy of the skill of shooting from a standstill with a basketball, I used (Appendix 2) with a measurement unit of (degree).

The researcher prepared (24) training units for exercises. Axial stability with moving contraction, and it was applied at a rate of (3) units between one day and another per week, for a period of (8) training weeks, as follows:

- These exercises were prepared after determining the type of muscular work of the rectus femoris muscles in the skill movements for the accuracy of the skill of shooting from a standstill with a basketball. High intensity training methods vary between plyometric training and ballistic training for young basketball players.
- It included the use of specialized resistances for moving balance, in addition to light weights, in accordance with the amount of resistance required and the duration of movement for stability in the skill of shooting from a standstill with a basketball, and it is applied at the beginning of the main section of the training unit for a period of (20) minutes, Appendix (3), Appendix (4).

- ☐ The repetitions of these exercises in the training units are inversely proportional to the intensity of each exercise, depending on the diversity of the two methods of high-intensity interval training and repetitive training.
- ☐ The principle of alternation in muscle work and diversification in the type of exercises were taken into account, as well as the principles of gradualness and undulation in increasing the intensity and volume of the training load.
- ☐ It was considered that overload training should be applied in the application of exercises for the purpose of causing physiological responses in the cellular environment.
- ☐ The axial stability exercises with moving contraction were characterized by flexibility in implementation during the duration of the special preparation period to suit the level of the young basketball players in the club, their training age, and their level of experience (Appendix 3).
- ☐ High intensity training (85-100%), with rest periods between repetitions and sets within the training unit according to the phosphogynecological anaerobic system specifications.
- ☐ The intensity is determined by the formula: maximum number of repetitions $\times$ required intensity.
- ☐ The rest period between repetitions was (15-45) seconds, between sets was (60-90) seconds, and between exercises was (2-5) minutes, which is consistent with the high intensity of the axial stability exercises with dynamic contraction.

The experiment was conducted during the special preparation period for the sports season (2023/2024), as the experiment began with the application of pre-tests on Sunday corresponding to the date (12/3/2023), and then the application of these exercises to the players of the experimental group for the period from Monday corresponding to the date (12/4/2024) until Wednesday corresponding to the date (1/24/2024), And the completion of this experiment by applying the post-tests on Thursday corresponding to the date (1/25/2024).

After the experiment was completed, the research results were processed using the Social Statistical Bag System. (SPSS) To calculate the percentage, mean, standard deviation, and t-test for correlated samples.

Results and discussion

Table1 for homogeneity of variance using Levene's test for the experimental shows the results of the pre-tests .research group

Dependent Variables Tests And the units of measurement for each of them			Sampl e numbe r	Arithm etic mean	Standar d deviati on	Liven	(Sig)	Signifi cance
EMG	Straight right thighs	The Summit	14	650.21	30.108	0.501	0.257	Not indicativ e
		Area	14	0.446	0.031	0.237	0.605	Not indicativ e
	straight left thighs	The Summit	14	587.64	32.2	0.481	0.312	Not indicativ e
		Area	14	0.353	0.026	0.217	0.615	Not indicativ e
Accuracy of shooting skill from a standstill			14	12.71	1.978	0.557	0.211	Not indicativ e

Not significant if Sig (<)0.05) at significance level (0.05

Table2 .Shows the results of the pre- and post-tests of the experimental research group

Test		comparison			Avera ge differ ence	deviat ion of differ ences	Value (T)	(Sig)	Significanc e
		Test	Arith metic mean	Standar d deviati on					
Straight thighs right	The Summit	tribal	650.21	30.108	2,429	0,043	775	0.000	Dal
		After me	712.64	3.104					
	Area	tribal	0.446	0.031	072	032	367	0.000	Dal
		After me	0.374	0.004					
straight thighs left	The Summit	tribal	587.64	32.2	3.857	9,006	592	0.000	Dal
		After me	646.5	18,287					
	Area	tribal	0.353	0.026	029	025	337	0.000	Dal
		After me	0.324	0.018					
Accuracy of shooting skill from a standstill		tribal	12.71	1.978	714	939	239	0.000	Dal
		After me	15.43	0.756					

-Degree of freedom (n) (1)) level significance 0.05) significance of difference , (Sig (≥) 0.05

in both the experimental and control groups that young basketball players show (improved their levels of Increased EMG peak The small area and the improvement in the accuracy level of the skill of shooting from a fixed position with a basketball in the results of the post-tests compared to what these results were in the pre-tests, (Khedir, 2018) and The researcher attributes the emergence of these results to the positive effect of the axial stability training by the moving contraction of the various muscle groups (Spiral Line) (spiral fascia) around the body and directing the effect of that work towards the rectus femoris muscles,(Mondher et al., 2023) which helped by developing synergy or muscle tension, in addition to adopting the principle of influencing the legs, considering that they carry the largest mass of the body (the muscles of the center and the upper limb and the body), (Kareem, 2023) as adopting the diversification in the use of moving balance tools and light resistances had a positive role in developing this type of muscle contraction and increasing the muscle's ability to produce muscle force (increasing the peak of the EMG signal) without fatigue by (the small area of the EMG signal), In addition to the good standardization of the training load for these exercises to suit the level of young players and their training age, (Easa et al., 2022) and the number of units per week, meaning that the results came to confirm that it is necessary to emphasize On the principle of including the muscles of the trunk and lower extremities when training young basketball players, and that training the thigh muscles alone is not sufficient to increase the player's control over his technical performance in achieving the accuracy of the skill of shooting from a standing position with a basketball. This confirms that “Core stability training with varied back muscle contractions is an important part of exercise to strengthen core muscles and maintain alignment and balance during daily and sporting activities. This type of training includes many exercises that target core muscles such as the abdominal, back and buttock muscles.” (Huxel Bliven & Anderson, 2013, p: 516)"In order to maintain axial stability in balance, the direction of the nerve impulses from the cerebral cortex is directed towards the muscles that increase the body's control over stability in abnormal conditions of balance. (Mousa & Kadhim, 2023) In fact, muscle tension continues to contract in some muscles to maintain balance or maintain posture without us feeling it unless we focus on it or increase this tension according to what is required to ensure the feeling of balance. Repetition with different positions using means of improving balance helps increase our ability to quickly take the position of balance if we encounter unstable conditions of posture " (Bronner & Ojofeitimi, 2013, p: 366) “Despite the complexity and intricacy of the processes involved in neuromuscular coordination, the human brain is able to easily integrate information coming from sensory organs, muscles and joints, thus providing a broad repertoire of adaptive behavior. In the field of sport, there is a need to understand and perceive the behavioral and neural mechanisms underlying performance and its improvement. (Jantzen

& Kelso, 2008, p. 79) “Training leads to physiological changes that include the body’s systems, and the level of athletic performance improves whenever these changes are positive, achieving physiological adaptation of the body’s systems and then physical load and skill performance.” (Adnan, 2010, p. 182) It is also “very important that these exercises are performed correctly and under the supervision of a qualified trainer to avoid injuries and ensure maximum benefit from them. (Abdulhussein et al., 2024) These exercises should also be included as part of a balanced training program that targets all aspects.” (Baker, 2017, p: 3) “Muscular balance on both sides of the body is the actual basis for good posture, and it adjusts the shape of the body from its current position to the ideal position it should be in.” (Muhammad, 2020, p. 28) also contributes to improving balance and mobility.” (Muhammad D., 2019, p. 8) Balance is also “vital to health and physical performance, as it is an important component of basic motor skills such as standing and walking, a key component of most sports activities that require standing or movement in a limited space, (Kadhim, 2024) and essential for daily living activities Such as climbing or lifting heavy weights.” (Kisner & Colby, 2020, p: 201) It also enhances overall strength and ability, and developing motor control helps improve accuracy and balance in performing exercises and sports movements directly related to technical performance and achievement. (Seitz & Other, 2022, p: 1119)

“Training that relies on the nervous system will be successful in improving speed, and training based on muscle strength and compound training will be successful in developing muscle capabilities and speed at the same time.” (Medhat, 2019, p. 188)

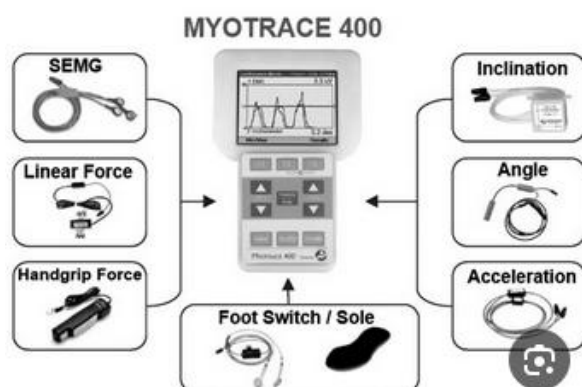
Conclusions and recommendations:

- 1- The preparation and application of dynamic contraction axial stability exercises is suitable for youth basketball players.
- 2- The application of axial stability exercises with moving contraction during the special preparation period helps improve the level of the electrical signal (EMG) by increasing the peak level and decreasing the area in youth basketball players.
- 3- Applying pivotal stability exercises with moving contraction during the special preparation period helps improve the level of shooting accuracy from stability in basketball for young basketball players.
- 4- When preparing axial stability exercises with moving contraction when training shooting accuracy from a fixed position with a basketball, it is necessary to adopt the principle of experimentation in that the point of impact is on the leg muscles to increase the level of neuromuscular control of muscle contraction stability in the thigh muscles.
- 5- It is necessary to take care not to overdo the time allocated to axial stability exercises in the main part of the training unit and to take care of the balance of training with the other muscles of the body.

Appendix (1)

explains the test of analyzing some variables of the electrical signal of the muscles: (Aid, 2010, p. 17)

This test was conducted by Device system (EMG) Type (MYOTRACE 400) American made with Bluetooth transmitter With eight sensors, (2) of which were used to measure the right rectus femoris and left rectus femoris muscles in this research, as shown in Figure (1), and to analyze the electrical signal using a program. (Myo Research XP 1.06.67) To process the device signal (EMG) for both the peak and the area as shown in Figure (2):



.the device system Figure (2) shows (EMG)



. Figure (3) Shows the program window (Myo Research XP 1.06.67)

Appendix (2) explains the free throw skill accuracy test: (Louay, et al., 2010, p. 334)

.Objective of the test: To measure free throw accuracy

.Tools: Legal basketball board, legal basketball

Procedures and performance: The throw is taken from behind the free throw line and each examiner has twenty attempts. The examiner may perform the free throws using any shooting method, provided that the teams perform in groups of (5) throws each, divided into (4) four groups, each group (5) throws for each examiner, after which another

examiner performs the first group. This allows for performing some throws before performing as a trial, and so on with each group

:Terms

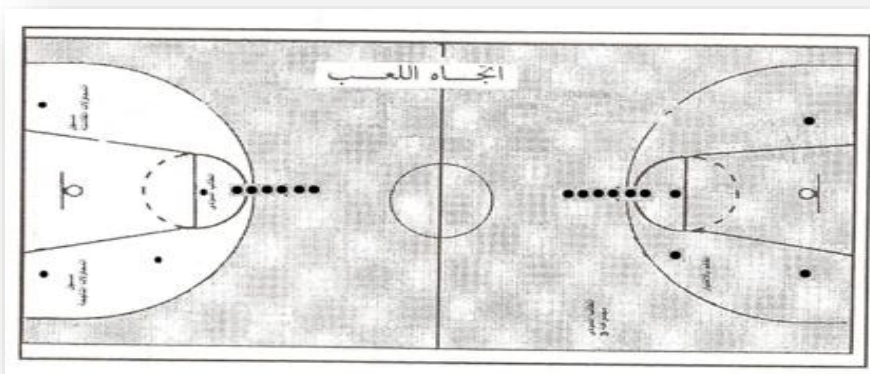
- 1- .Each tester has the right to perform twenty throws
- 2- .The shot must be made from behind the free throw line, as shown in Figure (12)

:Registration

One point is awarded for each correct shot made by the examiner (the ball entering the -1 basket), regardless of how it entered the basket. A (zero) is awarded if this is not achieved, even if it touches the ring

.Each tester has twenty throws in the performance -2

.The maximum score for the test is (20) points -3



.Figure (4) shows the free throw test image

.Appendix (3) shows illustrative images of axial stability exercises with moving contraction



By moving contraction . exercises axial stability Appendix (4) shows examples of some

Front Squats: This exercise directly targets the anterior thigh muscles while enhancing axial stability.

- ✓ Stand straight with your feet shoulder-width apart.
- ✓ Hold the barbell forward at shoulder level, with your elbows facing forward.
- ✓ Slowly lower into a squat position, keeping your back straight and your chest lifted.
- ✓ Push through the heels to return to the starting position.

Lunges: Lunges strengthen the rectus femoris and axial stability muscles.

- ✓ Stand straight with your feet together.
- ✓ Take a big step forward with your right foot, lowering until your front knee forms a 90-degree angle.
- ✓ Keep your torso straight and your abdomen tight.
- ✓ Push off with the front heel to return to the starting position and repeat with the other foot

Straight Leg Raises: This exercise targets the rectus femoris and axial stability muscles at the same time.

- ✓ Lying on your back with your legs extended.
- ✓ Slowly raise one straight leg until it forms a 45-degree angle with the floor.
- ✓ Keep your abdomen tight and your back flat on the floor.
- ✓ Slowly lower the leg and repeat with the other leg.

Box Step-Ups: This exercise helps strengthen the thighs and improve axial stability and balance.

- ✓ Stand in front of a box or platform raised about knee height.
- ✓ Place your right foot on the box and press through your heel to lift your entire body up to the top of the box.
- ✓ Slowly lower your left foot to the floor and repeat with the other foot.

Single-Leg Glute Bridge: This exercise targets the gluteal muscles, but it also requires activation of the rectus femoris muscles and axial stability.

- ✓ Lie on your back with your knees bent and your feet flat on the floor.
- ✓ Lift one straight leg towards the ceiling.
- ✓ Press through the remaining heel to lift the hips off the floor until the body forms a straight line from shoulders to knees.
- ✓ Slowly lower your hips and repeat with the other leg.

BicycleCrunches: This exercise strengthens the rectus abdominis and quadriceps while enhancing axial stability.

- ✓ Lie on your back with your hands behind your head.
- ✓ Lift your shoulders off the floor, then pull one knee toward your chest while extending the other leg.
- ✓ Rotate the trunk so that the opposite elbow meets the knee pulled toward the chest.
- ✓ Switching sides sequentially as in riding a bicycle

Plank with LegLift: This exercise improves axial stability and strengthens the thigh muscles.

- ✓ .A) Take a traditional plank position (body flat, resting on forearms and toes)
- ✓ Keeping your body straight and tight, slowly lift one leg off the ground.
- ✓ Hold this position for a few seconds, then lower the leg and repeat with the other leg.
- ✓ Make sure your hips remain stable and do not twist as you lift your leg.

Dynamic Bridge Exercise: This exercise strengthens the rectus femoris muscles while increasing the stability of the hips.

- ✓ Lie on your back with your knees bent and your feet flat on the floor.
- ✓ Raise your hips off the floor until your body forms a straight line from your shoulders to your knees.
- ✓ From this position, lift one foot off the ground and extend it straight forward.
- ✓ Hold this position for a few seconds, then return to the original position and repeat with the other leg.

Dynamic Stretching: These exercises help improve the flexibility of the rectus femoris muscles and prepare the body for physical activity.

- ✓ Stand straight and start stepping forward, raising your knee towards your chest.
- ✓ Grasp the knee with the hand and pull it towards the chest to stretch the rectus femoris.
- ✓ Step the leg forward and repeat the movement with the other leg.
- ✓ Keep moving , while maintaining balance and stability.

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The reality of the organizational environment for educational supervisors from the point of view of physical education teachers in Baghdad

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Abstract

The aim of the research to identify the details of the reality of the organizational environment for educational supervisors from the point of view of physical education teachers in Baghdad, and the two researchers relied on the descriptive approach on a sample chosen randomly from teachers and teachers of physical education who are continuing their time in their primary schools for the academic year (2023/2024), the total number (1730) individual, and they are distributed by (180) primary schools in the six education directorates in the capital, Baghdad, who are actually continuing the official working hours of the permanent owners and the number of those who number (1562) individuals, who were chosen for the survey Sam (0.694 %) of their origin society, as was chosen for the application sample (450) individuals included in the research in various schools of education directorates in the capital, Baghdad, and they represent (26.012 %) of their origin society, After the adoption of the organizational environment scale for educational supervisors, the main survey of the time period was conducted from Monday, corresponding to the date (4/8/2024) until Monday, corresponding to the date (6/4/2024), and results were addressed using the statistical bag system (SPSS) to be The conclusions and recommendations are that the educational education supervisors are an intermediate level of the organizational environment from the point of view of physical education teachers in Baghdad, and the point of view of physical education teachers in Baghdad has achieved an advanced level of the possession of educational physical education supervisors to justice the recommendation of the reward that raises the level of the organizational environment phenomenon, Raising the level of the organizational environment for educational education education supervisors needs to pay attention to organizational standards from the point of view of physical education teachers in Baghdad, and it is necessary to work to raise the organizational

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environment for educational education education supervisors because of its role in raising the level of change management they have to better levels, It is necessary to work to raise the level of organizational standards for educational education supervisors, because of the importance of raising the level of the organizational environment for them, and it is necessary to find ways to build direct cooperation seminars between the six directorates of education in the capital, Baghdad, with academics specialized in sports administration directly, to provide them with what It is new to raise the level of the organizational environment and the management of change for educational education supervisors

Key words: organizational environment, educators, physical education teachers.

Introduction:

It is one of the basic functions that management must be concerned with, for which it must set its goals in the short and long term, and it must bear responsibility for providing its opportunities, creating the appropriate atmosphere, and providing incentives and appreciation to those who succeed in it, and it must learn how to integrate creative talent into the organization and direct it in a specific direction ." (Abdullah, 2015)

"Administrative organization is of great importance to the success of institutions and the achievement of their goals, as it constitutes the human and material structure and tool through which an organized effort is established based on a drawn-up plan, and the various stages of the drawn-up efforts are directed and supervised for the purpose of achieving the goal ". (Mahmoud, 2008)

Likewise" ,any purposeful human activity must have management that leads its activity and directs it in the right direction, and the human element is considered the main determinant of administrative work. This is clear from the modern view of management, which focuses on it being an integrated human process related to planning, organizing, decision-making, (Manaf, 2015) communication, human relations, and monitoring the efforts of individuals ".In a specific administrative formation to achieve a set of desired goals efficiently and effectively. (Ramadan and Khadija, 2016)

"The administration must grant authority to its teachers so that they can be motivated and become committed, satisfied, (Mondher et al., 2023) and supportive of the administrative formation in achieving its goals, and the transfer of authority to teachers in any case should be done with great care, and at the same time the teachers to whom authority has been transferred must bear the burden of accountability ".about their actions (Ongori, 2009)

Also" ,the administrative process in which priorities are determined, strategies are set, programs are formed, and policies are drawn up, is what governs the organization's behavior in using the various material and human resources to achieve its goals ". (Mahmoud, 2012)

Likewise" ,the individual worker's awareness of distributive justice occurs through comparison between the proportion of the gains he obtains with the inputs and outputs of another worker ".(ahid, 2011)

"Creating an appropriate work environment, providing material and moral incentives, and applying modern management principles all contribute to increasing the employee's feeling of belonging to his administrative formation, (Mondher & Khalaf, 2023) as here comes the greatest role for officials in providing incentives while recognizing the achievements of employees, supporting them and establishing friendly relations ".And

friendship with them, and good control over the different situations that they both go through”. (Thaer, 2016)

It is also possible for an employee to be satisfied with his job in a comprehensive sense, and at the same time be dissatisfied with one or more of the specific components of his work. (Kareem, 2023) The person may realize that the actual work he performs may be rewarding and enjoyable, but he cares little about his colleagues with whom he works. The employee may be very satisfied with the opportunities for promotion within the administrative formation, but he receives a wage that is much lower than what he believes is appropriate for his work and abilities . (Patterson, 2010)

The two researchers noted the need to support the reality of the organizational environment, (Nashwan & Alzoubi, 2022) given that it is not possible to predict the level of its availability among educational supervisors unless it is subjected to objective diagnostic measurement. Therefore, arriving at the scientific truth requires work that this measurement be based on the determinants of an accurate diagnosis of what school sports management requires, which begins with a lesson. Physical education to know the actual reality of the phenomenon and then explore the strengths and weaknesses of several related fields, to ensure the continued development of the reality of the organizational environment that requires educational supervisors to deal efficiently represented by experiences. And administrative capabilities and skills and their optimal employment to solve problems or emergency events in the management of school sports using scientific methods. (Nashwan, 2024) Thus, the problem of the research lies as an attempt by the researchers to answer the question: What is the reality and level of reality of the organizational environment for educational supervisors from the point of view of physical education teachers in Baghdad? The research aims to identify the details of the reality of the organizational environment for educational supervisors from the point of view of physical education teachers in Baghdad. (HalahAtiyah et al., 2024)

Method and tools:

The researchers adopted the descriptive approach in the style of survey studies The two researchers adhered to the limits of the research problem community, which was represented by male and female physical education teachers continuing their work in their primary schools for the academic year (2023/2024), the total number of which is (1730) individuals, and they are naturally distributed among (180) primary schools in the six education directorates in the capital, Baghdad. The two researchers approached their study by adhering to what was observed in the research problem, ensuring that they achieve the objectives and methodological research procedures, and their continued presence on official working days to provide ease of contacting them, as (168) individuals were excluded, at a rate of (%9.711) of those who do not achieve the objectives required for this research, bringing the number of individuals actually continuing official work on permanent staff and included in the research to (1562) individuals . Among them, (12) random individuals were selected for the survey sample from various primary schools in the six education directorates in the capital, Baghdad, from those included in the research, with a percentage of (0.694%) from their community of origin. The small number of them came in light of the fact that the methodological procedures conducted on them are limited to testing the scale only, and to achieve For the purposes of the reconnaissance experiment, and without any statistical processing of the data for this reconnaissance experiment Aware of the criteria for its

individuals ,Also, (450) individuals were selected for the application sample from those included in the research in various schools of the six education directorates in the capital, Baghdad, and they represent (26.012%) of their community of origin .The methodological procedures for this sample are determined by applying the research scale to arrive at solutions to the current research problem and answer its questions.

The two researchers also adopted the Nadia scale (2024) to measure the point of view of physical education teachers about the organizational environment of physical education supervisors. It is a specialized scale for them and was not built for a period of (6) months, and it meets the scientific conditions for paper-and-pencil scales, as its details are shown in the table:(1) .

Table (1) shows the structure of the organizational environment scale for educational physical education supervisors as stated from its source

Scale areas	Number of paragraphs	Answer alternatives to paragraph statements	Key to correct paragraph substitutions	approx Total score	Hypothetical mean
Fairness of recommending rewards	5	I completely agree, I agree, neutral, I don't agree, I don't completely agree	5 4 3 2 1	25- 5	15
Social relations management	5			25- 5	15
Organizational support for internal and external environments	5			25- 5	15
Organizational structure.	5			25- 5	15
Risk and conflict management.	5			25- 5	15
Regulatory standards.	5			25- 5	15
the total	30	5	5	-30 150	90
Unit of measurement: score, number of instructions for the answer(5)					

The two researchers applied the form of the scale adopted in this research to the application sample, which numbered (450) individuals, with the help of the assistant work team in the locations of the schools of the individuals of this sample within the geographical area belonging to the six general directorates of education under study, by conducting the main survey study on them and measuring Directly for them, in a collective and individual

way, by utilizing their presence as an official working hours in their primary schools for the period of time from Monday, corresponding to the date (8/4/2024) until Monday. Corresponding to the date (6/4/2024), by adhering to the measurement procedures and how to apply the scale to them, and then categorizing the scores extracted from this application by adopting the mechanism of emptying them from the paragraphs by means of the five-point correction key for their alternatives, and then collecting them in each of the areas of the organizational environment scale for educational supervisors. Mathematics educators, as this was done on special paper forms and stored in the electronic calculator in preparation for statistical processing.

The results were processed using the statistical bag system) SPSS (version) V(26To process the data automatically by finding each of the following values: percentage, arithmetic mean, standard deviation, and test) .t-test (For uncorrelated samples.

- .1 The total score of the scale = the number of items in the scale x the highest weight in the item alternatives.
- .2 Total domain score = number of paragraphs in the specified domain x highest weight in paragraph alternatives.

The sum of the weights of the alternatives

$$.11 \text{Hypothetical mean} \times \frac{\text{Number of paragraphs (Wahib, 2010, p. 100)}}{\text{Number of alternatives}} = \text{number of}$$

Results:

Table (2) It shows the statistical features to compare the arithmetic mean with the hypothetical mean for the organizational environment scale for educational physical education supervisors

Number of individuals in the application sample	Number of paragraphs	Total score	Hypothetical mean	The middle Arithmetic	Standard deviation	average The difference between the two means	(t)	Sig
450	30	150	90	113.32	14.608	23.32	33.865	0.000

The difference is significant if it was) Say (0.05) < (At the degree of freedom (n-1) = (449) and the level of significance (0.05) Unit of measurement (degree)

table (3) It shows the statistical features to compare the arithmetic mean with the hypothetical mean for each area of the organizational environment scale for physical education educational supervisors.

Scale areas	Number of paragraphs	Overall field score	Hypothetical mean	Arithmetic mean	Standard deviation	Average difference between the two means	t	Sig	Ranking
Fairness of recommending rewards	5	25	15	20.78	3.145	5.776	38.96	0.000	the first
Social relations management	5	25	15	20.4	2.844	5.396	40.245	0.000	the second
Organizational support for internal and external environments	5	25	15	19.58	0.87	4.58	111.712	0.000	the third
Organizational structure	5	25	15	18.23	1.832	3.227	37.363	0.000	Fourth
Risk and conflict management.	5	25	15	18.18	1.772	3.184	38.124	0.000	Fifth
Regulatory standards.	5	25	15	16.16	4.656	1.158	5.275	0.000	Sixth

The statistical difference is significant if it is $(0.05) < (At the degree of freedom (n-1) = (449) \text{ and the level of significance } (0.05) \text{ Unit of measurement (degree($

Discussion:

From reviewing the results of the application sample on the organizational environment scale for physical education supervisors presented in Table (2), it becomes clear that the positive level of this phenomenon has emerged from the point of view of physical education teachers. From reviewing the results of the application sample on the areas of the organizational environment scale for physical education supervisors presented in Table (3). It turns out that the opinions of the application sample showed that the values of the arithmetic mean for the six domains exceeded the values of the hypothesized mean for each of them in this scale, which means that the level of the domains of the organizational environment scale for physical education supervisors was at a positive level, with all of them varying, as the results indicate. (Salih et al., 2024) The details in this table indicate that the highest difference in comparisons between the hypothetical mean and the arithmetic mean for each of the fields ranked first in the field of fairness of recommending rewards, while the smallest difference was in the field of organizational standards, which ranked sixth, and was not seen among the fields of the scale of the organizational environment for educational supervisors. (Kadhim, 2023) Mathematics is weak at the level, and by referring to the results of the standard evaluation reference mentioned in Tables (4-2) and (4-3) to judge the level of the arithmetic mean within the categories of qualitative judgment at its level with the scores of this scale. Its evaluation was average, and the researcher attributes the emergence of this result to the importance of the organizational environment for physical education supervisors in organizing and determining the relationship with physical education teachers in order to advance their professional work in the physical education lesson, and to create opportunities for them to increase participation in school tournaments in coordination with school sports activity supervisors. This is what allows teachers the satisfaction required for their professional work, which can be invested in several aspects through which administrative creativity and excellence are produced for both supervisors and teachers to maintain the communication circles aimed at this advancement of work, which gives Indicating the importance of taking into account the point of view of physical education teachers in judging this phenomenon among educational supervisors. (Kadhim et al., 2021) The organizational environment is the mediator between work satisfaction and performance. The level of satisfaction indicates the presence of a positive organizational environment that allows high levels of performance, and vice versa ”. (Amjad, 2011)

Also“ ,the physical education teacher is considered one of the most important elements of the educational process that is relied upon to build good and effective generations in civilized societies. He is also considered one of the most important factors that affect the quality of education. (Kazar & Kazim, 2020) This is why he is given the important role in listening to the educational institution’s evaluation of its management in order to ensure the improvement of the required outcomes ”.Of his teaching ”. (Bokdam & Broek, 2014)

Also“ ,a good organizational environment enhances performance and productivity by providing a clear structure, precise distribution of tasks, and clearly defining goals ”. (Nelson & Quick, 2013)

In addition“ ,directives and policies can be improved by increasing the efficiency of the management of sports activities, as administrative directives and policies must be clear and

understandable to everyone, and these directives must reflect and enhance the goals of the administrative formation.”. (Leon & Other, 2017)

The researcher also attributes the results of the fairness of the recommendation for rewards over the rest of the areas of the scale, which give an indication of the strengths in the organizational environment of physical education educational supervisors, to the fact that the individuals in the application sample’s answers were attracted towards their complete agreement towards educational supervisors providing fair recommendations to reward distinguished teachers, (Manaf, 2022) and in a manner that is commensurate with The extent of their excellence, and that educational supervisors have adopted a clear system for recommending these rewards, and that they themselves see the excellence of teachers who deserve to be recommended for rewards, They take into consideration that the reward obtains the satisfaction of the teachers before recommending it, so that the results of this area represent strengths in the phenomenon of the organizational environment for educational supervisors, the results of which helped in the emergence of this positive result for the scale. (Munaf et al., 2022)

Also“ ,If the individual is able to satisfy his needs, he feels satisfied and reassured, and if he fails, he makes other attempts and other methods such as: withdrawal, justification, despair, or following any abnormal (pathological) method. In this last case, poor adaptation is evidence of psychological ill health ”.And a guide to personality disorder . (Dobroradnykh, 2003)

The researcher also attributes the emergence of this result to the phenomenon of the organizational environment, to the high level of social relations management that characterizes educational supervisors, which also gives another indication of the strengths in the organizational environment of educational physical education supervisors, to the point that the members of the application sample were attracted towards the ability of educational physical education supervisors. From consolidating relationships between teachers participating in school tournaments, and their keenness to build trust between physical education teachers in the same school, and bringing the points of view between school administrations and teachers closer together. Physical education, and their keenness to ensure that a friendly atmosphere prevails in school sports tournaments, mediated by the interest of educational physical education supervisors in communicating with sports activity management supervisors and physical education teachers in one circle.

“Social exchange theory is one of the most widely used theories to understand behavior in the workplace, (Kazim et al., 2019) as this exchange involves a series of interactions that generate obligations. The basic principle of this theoretical approach is that relationships develop over time into trust, then loyalty, then mutual commitment, and for the occurrence of the parties must adhere to certain rules of exchange, the most prominent rule being the rule of reciprocity, (Jamil & Saeed, 2021) as the exchange begins with one party giving a benefit to another if the recipient reciprocates, and a series of beneficial exchanges occur and create feelings of commitment between the two parties. (Najah, 2017)

Likewise“ ,the individual’s continuous interaction with his external environment gives him certain relationships with things, phenomena, and events, which makes his life filled with various emotions, such as joy, (Mahmood & Kadhim, 2023) pleasure, terror, fear, anger, and hatred. Emotions arise through the individual’s interaction with the experiences to which he is exposed, as they cannot be repelled or repulsed ”.Stop it even though it may cause the individual to feel unable to control the behavior ”. (Shamoon, 2009)

“Management must communicate effectively with employees of the organization and provide transparent and honest information about work, results and developments .”. (Fathi, 2019)

Also“ ,listening is a direct reason for communication and building trust between the leader and the subordinates based on the subordinates ’perception of their leader’s behavior, which shows attention, concern, and good behavior towards them. If the subordinate realizes that his leader is listening to him, (Kadhim, 2024) the possibility of sensing communication between them will increase and contribute to building harmonious relations between the two parties ”. (Khorakian & Others, 2018)

Bandura also believes, quoting Ali Rageh Barakat, that“ individuals have the ability to influence their behavior and their environment, that is, when a person arranges the variables in the situational environment, and creates cognitive foundations to produce the desired effects that can be derived from the variables, he exercises the characteristic of self-control, and accordingly, Energy, ability, means, methods, or strategies enable us to continuously and successfully interact with the environment (Ali, 2012)

As for the results of the area of weakness in this scale, they came to the area of organizational standards, and the researcher attributes the emergence of these results to the neutrality and lack of agreement in the answers of the application sample in a varying manner due to the attraction towards the necessity for physical education supervisors to pay attention to the coordination of scientific ideas with physical education teachers to implement the annual plan, and for supervisors to approve Physical education educators regulate the external influences surrounding physical education teachers to raise the level of their performance, and the lack of delegating some of their powers to school principals for the purpose of facilitating organizational matters, and the need to develop Alternative plans when emergency symptoms occur that prevent the implementation of the physical education lesson, and to take corrective measures in the physical education lesson after supervision by the physical education educational supervisors. (Munaf et al., 2021)

“The effectiveness of individuals ’accomplishment of the tasks entrusted to them depends on coordination of informing workers of their duties and the duties of their peers on a clear, regular basis in which an atmosphere of justice prevails. Thus, it raises for them the factors for achieving success in the administrative formation to which they are assigned ”. (Armstrong, 2012)

Conclusions and recommendations:

.1Physical education supervisors have an average level of organizational environment from the point of view of physical education teachers in Baghdad.

.2The point of view of physical education teachers in Baghdad achieved an advanced level of physical education supervisors 'possession of the fairness of recommending rewards that raise the level of the phenomenon of the organizational environment.

.3Raising the level of the regulatory environment for physical education supervisors requires attention to organizational standards from the point of view of physical education teachers in Baghdad.

.4It is necessary to work to raise the organizational environment for physical education supervisors because of its role in raising their level of change management to better levels.

.5It is necessary to work to raise the level of organizational standards among physical education supervisors because of their importance in raising the level of their organizational environment.

.6It is necessary to find ways to build direct cooperation circles between the six education directorates in the capital, Baghdad, with academics specializing in sports management directly, to supplement them with what is new to raise the level of the organizational environment and change management for physical education supervisors.

Appendix (1) shows the organizational environment scale for educational physical education supervisors

T	First: Fairness of recommending rewards:	Mark you with a sign(√)				
		I completely agree	I agree	neutral	I don't agree	I don't completely agree
1	Physical Education Supervisors provide fair recommendations to reward outstanding teachers.					
2	Physical education supervisors make recommendations to reward teachers in proportion to their excellence.					
3	Physical education supervisors adopt a clear system for recommending and rewarding distinguished teachers.					
4	Physical education supervisors inform educators themselves about the					

	excellence of teachers who are worthy of being recommended for reward.					
5	Physical education supervisors take care that the reward meets the teachers ' satisfaction before recommending it.					
T	Second: Social Relations Management:	Mark you with a sign(√)				
		I completely agree	I agree	neutral	I don't agree	I don't completely agree
1	Physical education supervisors are able to strengthen relationships between teachers participating in school tournaments.					
2	Physical education supervisors are keen to build trust among physical education teachers in the same school.					
3	Physical education supervisors work to bring viewpoints closer between school administrations and physical education teachers.					
4	Physical education supervisors are keen to ensure that school sports tournaments are in a friendly atmosphere.					
5	Educational physical education supervisors are interested in communicating with sports activity management supervisors and physical education teachers in one circle.					
T	Third: Organizational support for the internal and external environments:	Mark you with a sign(√)				
		I completely agree	I agree	neutral	I don't agree	I don't completely agree

1	Physical education supervisors adopt a formal system to control internal and external environmental events in the school that help the progress of the physical education lesson.					
2	I see that cooperation is clear between physical education supervisors and school principals in supporting the internal and external environments of the physical education lesson.					
3	Physical education supervisors take into account the expected changes in the environment surrounding the physical education lesson and develop plans to support adaptation to them.					
4	The atmosphere of cooperation between physical education supervisors and teachers in schools is characterized by harmony.					
5	Educational physical education supervisors determine the best responses to rapid changes in order to exploit them positively.					
T	Fourth: Organizational Structure:	Mark you with a sign(√)				
		I completely agree	I agree	neutral	I don't agree	I don't completely agree
1	Physical education supervisors show interest in teachers' opinions when making decisions related to their work.					
2	Educational physical education supervisors follow up on school complaints related to the shortage or					

	excess of students in the organizational structure.					
3	Educational physical education supervisors adhere to the regulations, laws, and work instructions without exceeding his authority when visiting the school.					
4	Educational physical education supervisors work to facilitate tasks without referring to excessive administrative circles.					
5	Physical education supervisors and teachers participate in developing proposals for developing the organizational structure of the staff.					
T	Fifth: Managing risks and conflicts:	Mark you with a sign(√)				
		I completely agree	I agree	neutral	I don't agree	I don't completely agree
1	Physical education supervisors have objective methods for judging conflicts between teachers.					
2	Pedagogical physical education supervisors facilitate communication between the school administration and teachers to resolve disagreements in a timely manner.					
3	Physical education supervisors discuss the decision to be made to resolve conflicts between teachers from multiple perspectives.					
4	Physical education supervisors maintain the stability of group values among teachers.					

5	Physical education supervisors provide workshops on tolerance and awareness of risks and conflicts.					
T	Sixth: Regulatory standards:	Mark you with a sign(√)				
		I completely agree	I agree	neutral	I don't agree	I don't completely agree
1	Physical education supervisors are interested in ensuring that scientific ideas are consistent with physical education teachers to implement the annual plan.					
2	Physical education supervisors intend to regulate the external influences surrounding physical education teachers to raise the level of their performance.					
3	Physical education supervisors delegate some of their powers to school principals for the purpose of facilitating organizational matters.					
4	Physical education supervisors develop alternative plans when emergency symptoms occur that prevent the implementation of the physical education lesson.					
5	Corrective measures are taken in the physical education lesson after supervision by the physical education educational supervisors.					

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The Effect of a Psychological Counseling Program to reduce irrational ideas and the causal attribution of the coaches of the gymnasium sports care center

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Abstract:

The research aimed to prepare a psychological counseling program for the coaches of the Sports Care Center in the gymnasium, and to learn about the impact of the psychological counseling program in reducing irrational ideas and causal attribution of the coaches of the Sports Talent Care Center in the gymnasium, to assume that there are statistically significant differences between the results of the tribal and posttests of the research group Experimental in the scale of irrational ideas, and there are statistically significant differences between the results of the tribal and posttests of the experimental research group in the scale of the causal attribution scale, The experimental approach was adopted by designing one experimental group, and the current research problem population was represented by coaches of various categories at the National Center for Nurturing Sports Talent in Gymnastics in Baghdad, a total of (18) coaches for the adult (2023/2024) sports season. The main research sample for application was chosen from them intentionally using a survey method. The number of the procedural research group, whose arithmetic mean exceeded the hypothesized mean for the scales of irrational thoughts and causal attribution, reached (12) trainers to represent the experimental research group with a percentage of (66.667%) of their community of origin. The research procedures for building the two measurement tools of the paper-and-pencil type also required selecting a similar sample from outside the boundaries of the problem. The research procedures concerned them with verification of scientific conditions and statistical analysis, and (43) coaches from clubs in the capital, Baghdad, were chosen for them. And after the completion of the construction of the two scales, (7) counseling sessions were prepared and applied in the research experience on the experimental group coaches, and then tackled their results with a system (SPSS), and the conclusions were that the irrational ideas and the causal attribution of the coaches of the gym gynecology center enjoyed the conditions and scientific transactions to accept tools Sikomitry measurement in sports psychology, and the preparation of the psychological counseling program based on reducing the level of irrational ideas and

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causal attribution is suitable for the coaches of the Sports Talent Care Center in the gymnasium, and the psychological counseling program helps in reducing the level of irrational ideas and the causal attribution of the coaches of the Sports Care Center in the gymnasium, As for the research recommendations, it is necessary that it is necessary to pay attention to the gymnasium measurement according to the determinants of mathematical psychology to track the condition of the coaches of the Sports.

Keywords: psychological counseling program, irrational ideas, causal attribution, the coaches of gymnasium.

Introduction:

The nature of the relationship between gymnastics coaches at the Center for Sports Talent Development, along with the surrounding administrators, players, and peers, generates various responses that arise from their thinking patterns regarding events. Additionally, different events impose varying levels of pressure, requiring them to confront and adapt to these challenges .

"Emotional experiences in sports significantly influence individuals by mediating their perception of self-efficacy in controlling their emotions and the resulting behaviors." (Al-Masri, 2012, p. 20)

Moreover, "it is certain that emotions play an important role in guiding human thought and behavior, determining the individual's relationship with the external world. The psychological heritage, both ancient and modern, is rich with topics indicating a mutual interaction between an individual's feelings and their psychological structure (or personality). Wardeell & Royce presented a series of studies confirming the extent to which human personality is affected by the emotional system of a person." (Maghree, 2008, p. 4)

Mahmoud notes that "Ibn Khaldun emphasizes that human capacity for thinking and rationality are the most distinctive and unique characteristics of humanity. He indicates in his introduction that these traits distinguish humans from others through their specific thinking and thought processes." (Al-Dawoodi, 2004, p. 105)

It is clear that "each individual has their own unique thinking style, making it difficult to predict how others think." (Al-Atoom, 2004, p. 79)

Additionally, "humans are naturally positive thinkers; if they are in a positive environment, they behave positively. However, if they find themselves in a negative environment, it will adversely affect their positive thinking." (Bailis & Seligman, 2009, p. 13)

Zainab points out that "Allport presented a positive perspective regarding humanity, considering humans as active and rational beings. He asserted that as individuals mature, they progress in making choices and alternatives in their behavior and goals, viewing present and future events as having the greatest influence on human behavior. He also granted humans the ability to plan for the future and considered them in a state of constant becoming, always moving forward towards their future aims and objectives. Moreover, Rogers believes that humans are rational beings that move forward with an innate tendency for growth and goal achievement, working towards fully realizing their potentials in the future." (Al-Asadi, 2017, pp. 29-31)

The researcher believes that the nature of the professional training work for coaches at the Sports Talent Development Center for gymnastics requires a renewal of thought and interaction with the training environment. The objectives of this environment are to help athletes achieve

advanced positions, whether competitive or to enhance their training status in accordance with their specific sports talents. This drives these coaches to generate irrational ideas to face the tasks assigned to them in order to maintain their positions in continuing to train this group. This is characterized by varying motivations, exaggeration, and unreasonable optimism about the future results of their players, without taking into account the available training resources and the requirements for participation in leagues or foreign friendly matches. Such attitudes negatively impact the nature of their training work and its future in this center.

Furthermore, "building an individual's psychology to change many irrational ideas that lead to pessimism and helping them cope with situations and psychological threats depends on their ability to visualize or to gradually confront the frightening situation, or to establish a successful alternative, or to refute a negative, irrational idea." (Al-Bilawi, 2015, p. 19)

Irrational thoughts are defined as "incorrect and illogical ideas that include binary and catastrophic thinking about matters and objects, in addition to trivializing and exaggerating events in many life situations." (Covino, 2018, p. 303)

Moreover, "numerous studies have shown that irrational thoughts increase disturbances and lead to a diminished ability to deal with problems." (Oraki & Others, 2018, p. 177)

"Through his research, Ellis was able to identify eleven irrational ideas that are responsible for the majority of the psychological disorders and problems individuals face. These ideas are: the demand for approval, the pursuit of personal perfection, severe self-blame and blame of others, expecting disasters and catastrophes, emotional recklessness and indifference, excessive anxiety, avoiding dependency problems, feelings of helplessness, distress over others' troubles, and the final idea of seeking complete solutions." (Ellis, 2004, P: 26)

"The task of thinking lies in finding appropriate solutions to the pressing theoretical and practical problems an individual faces in nature and society. This task is constantly renewed, which drives the continuous search for new methods and techniques to overcome difficulties and obstacles. Therefore, thinking as a cognitive process is an essential element in the cognitive mental structure that an individual possesses. It is characterized by its social nature and by its systematic function, which allows it to interact with the constituent elements of this structure—it affects and is affected by other cognitive processes such as perception, conception, and memory. It also influences and is influenced by aspects of the individual's emotional, affective, and social personality." (Rizouqi et al., 2019, p. 11)

The researcher believes that the presence of irrational thoughts among the trainers in the study may lead them to an intensified emotional state in an attempt to validate the rationality of these irrational thoughts. In the case of their inability to confront reality, they display illogical justifications to justify the failure of these thoughts, which represents a state of learned helplessness resulting from interaction with events.

Causal attribution is defined as "a type of resignation that arises as a reaction to the continuous problems and frustrations an individual faces, making them feel negativity, weakness, and the belief that whatever they do will not yield the desired result." (Al-Tal and Al-Harbi, 2014, p. 52)

Causal attribution is also defined as "a psychological state in which three main types of disorder appear: cognitive disorder, characterized by the individual's weakened ability to learn from past experiences; motivational disorder, reflected in the individual's low motivation to try to control events, leading to resignation to failure, negativity, and lack of desire to try

again to achieve or get closer to the goal; and emotional disorder, represented by negative emotions such as anxiety and anger, and possibly indicators of depression due to the individual's reduced ability to control events." (Seligman, 2009, P: 18-33)

Certain characteristics of individuals with causal attribution can be clarified as follows (Al-Farhati, 2009, p. 28):

- A lack of feedback, which would help the individual adjust, change, or continue adhering to suitable plans to achieve desired goals.

- An absence of integration between the ego and the superego, which leads to an inability to achieve desired goals.

" Causal attribution transforms from a practice into a state when an individual perceives that the events or situations they encounter occur beyond their control. No matter how much effort they put in, their attempts will end in failure. This experience does not end there; it leads the individual to a stage or point of feeling oppressed by environmental demands, resulting in a failed attempt to achieve a desired outcome." (Rabee, 2009, p. 22)

Psychological counseling is defined as "a private meeting in which the counselor listens and attempts to understand the client, identifying what behavioral changes can be made in a way the client chooses and approves. The client must have a problem, and the counselor must have the skill and experience to work with the client to reach a solution." (Ibrahim, 2016, p. 10)

Given the limitations of sports psychology to reduce negative psychological phenomena, reliance must be placed on counseling programs that are based on diagnosing the weaknesses that elevate these phenomena. Due to the lack of specialized measurement tools for gymnastics coaches to assess irrational thoughts and causal helplessness, it is not possible to definitively determine their presence within this group of coaches. However, through the researcher's repeated visits to the Sports Talent Development Center to which these gymnastics coaches belong, she observed excessive self-praise regarding their coaching abilities, overconfidence in their players' futures, and an expectation of disasters that prevent the fulfillment of these expectations. This results in an emotional reaction due to their illogical predictions. This issue requires addressing through academic studies in sports psychology based on the observed behavioral disturbances, thereby shaping the research problem, which aims to answer the following questions:

- 1 .What is the level of irrational thoughts among gymnastics coaches at the Sports Talent Development Center?
- 2 .What is the level of causal attribution among gymnastics coaches at the Sports Talent Development Center?
- 3 .Do psychological counseling programs positively affect the reduction of both irrational thoughts and causal attribution among gymnastics coaches at the Sports Talent Development Center?

Thus, this research aims to develop a psychological counseling program for gymnastics coaches at the Sports Talent Development Center and to examine the program's effect in reducing irrational thoughts and causal attribution among these coaches. The researcher hypothesizes that there are statistically significant differences between the results of the pre- and post-tests of the experimental group on the irrational thoughts scale, as well as statistically significant differences between the pre- and post-tests on the causal attribution scale.

Method and Procedures:

Based on the parameters of the current research problem, the experimental research method with a one-group pretest-posttest design was adopted. The experimental research method is defined as “controlling the independent variable under specific conditions to influence changes in the dependent variable from one state to another without interference from extraneous variables” (Kahalalah, 2023, p. 98).

The research population consisted of coaches of various categories at the National Sports Talent Development Center for gymnastics in Baghdad, totaling 18 coaches actively training during the 2023/2024 sports season. These coaches were studied because they represent the boundaries of the community identified within the research problem. The main research sample for application was purposefully selected from this group using an operational survey method. Those who exceeded the hypothetical mean on the scales of irrational thoughts and causal attribution, once fully developed, numbered 12 coaches, representing 66.667% of the original population as the experimental group. The remaining six coaches from this community served as the pilot sample, representing 33.333%.

The research procedures required the construction of paper-and-pencil measurement tools, necessitating the selection of a comparable sample outside the research boundaries to verify scientific conditions and conduct statistical analysis. A total of 43 coaches from 14 other talent centers were selected, meeting the condition that the number of the construction sample exceed that of the main application sample within these specified communities. Due to the lack of specialized measurement tools for the studied psychological phenomena, the researcher developed the scales specifically for the gymnastics coaches at the Talent Development Center. A total of 22 items were prepared for the irrational thoughts scale, and 20 items for the causal attribution scale, based on the theoretical framework for these psychological phenomena and adapted to suit this group of coaches in accordance with the criteria of measurement and evaluation in sports psychology. Each scale item provided three response options: "Always applies to me," "Sometimes applies to me," and "Never applies to me," with scoring keys of 3, 2, and 1, respectively. A higher score on each scale indicates an undesirable level of the phenomenon.

The steps for developing the scales were as follows:

After determining the name and purpose of each scale, the researcher prepared two paper-based survey questionnaires, incorporating preliminary versions of each scale under investigation. These were reviewed by 21 experts in sports psychology, testing and measurement, and gymnastics, with over 80% agreeing to retain the items, response options, scoring keys, and scale instructions without any deletions, modifications, merging, or additions to the content of the items. Thus, both scales achieved face and content validity.

The scales were then piloted with the six coaches in the pilot sample to anticipate any potential challenges and to ensure clarity of the items and instructions for the respondents. Additionally, the average time to complete each scale was recorded for organizational purposes: 6 minutes for the irrational thoughts scale and 5 minutes for the causal attribution scale.

The researcher verified the items' discriminative power by applying both versions of the scales to the construction sample used for statistical analysis, which consisted of 43 coaches. Their scores were arranged in descending order for each item on each scale, and the top and bottom 27% groups, which amounted to 11.61 for each group (rounded to 12), were selected.

This made 12 participants in each of the upper and lower groups. Statistical analysis was then conducted on the differences between these two groups using the independent samples t-test. The procedures were performed systematically with separate statistical treatments, as shown in the results of Tables 1 and 2 b

Table (1) shows the discriminatory ability results for the items of the irrational thoughts scale for "gymnastics coaches"

Discrimination	Difference	(Sig)	(t)	$\pm$ Standar d deviatio n	Arithm etic mean	Numb er	Group	State ment
Distinct	Indicative	0.001	3.964	0.515	2.42	12	High	1
				0.515	1.58	12	Low	
Distinct	Indicative	0.000	7.587	0.492	2.33	12	High	2
				0.289	1.08	12	Low	
Distinct	Indicative	0.000	7.091	0.522	2.5	12	High	3
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	6.633	0.492	2.67	12	High	4
				0.492	1.33	12	Low	
Distinct	Indicative	0.000	6.739	0.515	2.58	12	High	5
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	10.761	0.452	2.75	12	High	6
				0.289	1.08	12	Low	
Distinct	Indicative	0.000	6.289	0.452	2.25	12	High	7
				0.389	1.17	12	Low	
Distinct	Indicative	0.001	3.647	0.515	2.42	12	High	8
				0.492	1.67	12	Low	
Distinct	Indicative	0.000	6.739	0.515	2.58	12	High	9
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	8.279	0.389	2.83	12	High	10
				0.492	1.33	12	Low	
Distinct	Indicative	0.000	5.117	0.522	2.5	12	High	11
				0.515	1.42	12	Low	
Distinct	Indicative	0.000	8.224	0.289	2.92	12	High	12
				0.522	1.5	12	Low	
Distinct	Indicative	0.000	8.279	0.492	2.67	12	High	13
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	8.124	0.452	2.75	12	High	14
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	7.603	0.389	2.83	12	High	15
				0.515	1.42	12	Low	
Distinct	Indicative	0.000	5.267	0.515	2.42	12	High	16
				0.492	1.33	12	Low	

Distinct	Indicative	0.000	8.802	0.289	2.92	12	High	17
				0.515	1.42	12	Low	
Distinct	Indicative	0.000	7.603	0.515	2.58	12	High	18
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	6.289	0.452	2.25	12	High	19
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	7.34	0.492	2.67	12	High	20
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	6.268	0.452	2.75	12	High	21
				0.522	1.5	12	Low	
Distinct	Indicative	0.000	5.631	0.522	2.5	12	High	22
				0.492	1.33	12	Low	

"The item is considered significant if the (Sig) value is (0.05) at the significance level of (0.05) with 22 degrees of freedom."

Table (2) shows the results of the discriminatory ability for the items of the causal attribution " ".scale for gymnastics coaches

Discrimination	Difference	(Sig)	(t)	$\pm$ Standard deviation	Arithmetic mean	Number	Group	Statement
Distinct	Indicative	0.000	4.025	0.515	2.58	12	High	1
				0.389	1.83	12	Low	
Distinct	Indicative	0.000	7.824	0.515	2.42	12	High	2
				0.289	1.08	12	Low	
Distinct	Indicative	0.000	8.802	0.515	2.58	12	High	3
				0.289	1.08	12	Low	
Distinct	Indicative	0.000	8.124	0.452	2.75	12	High	4
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	8.279	0.492	2.67	12	High	5
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	6.289	0.389	2.83	12	High	6
				0.452	1.75	12	Low	
Distinct	Indicative	0.000	3.317	0.492	2.33	12	High	7
				0.492	1.67	12	Low	
Distinct	Indicative	0.000	4.69	0.522	2.5	12	High	8
				0.522	1.5	12	Low	
Distinct	Indicative	0.000	8.279	0.492	2.67	12	High	9
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	10.761	0.289	2.92	12	High	10
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	6.078	0.515	2.58	12	High	11
				0.492	1.33	12	Low	

Distinct	Indicative	0.000	6.739	0.452	2.75	12	High	12
				0.515	1.42	12	Low	
Distinct	Indicative	0.000	10.761	0.452	2.75	12	High	13
				0.289	1.08	12	Low	
Distinct	Indicative	0.000	10.488	0.389	2.83	12	High	14
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	4.599	0.389	2.17	12	High	15
				0.492	1.33	12	Low	
Distinct	Indicative	0.000	6.268	0.522	2.5	12	High	16
				0.452	1.25	12	Low	
Distinct	Indicative	0.000	5.267	0.515	2.42	12	High	17
				0.492	1.33	12	Low	
Distinct	Indicative	0.000	9.192	0.452	2.75	12	High	18
				0.389	1.17	12	Low	
Distinct	Indicative	0.000	4.457	0.492	2.33	12	High	19
				0.515	1.42	12	Low	
Distinct	Indicative	0.000	6.078	0.515	2.58	12	High	20
				0.492	1.33	12	Low	

The item is considered significant if the (Sig) value is (0.05) at the significance level of (0.05) with 22 " "degrees of freedom

"

Continuing with the statistical analysis of the items of both scales, the internal consistency validity was verified using statistical treatments for their application scores on a sample of 43 coaches.

This was done by calculating the simple Pearson correlation coefficients between the score of each item and the total score of the scale it belongs to, as shown in the results of Tables (3) and (4)

"below

".Table (3) shows the internal consistency of the irrational thoughts scale for gymnastics coaches"

(Sig)	The correlation " values between the item score and the total score of the ".scale	s	(Sig)	The correlation " values between the item score and the total score of ".the scale	s
0.000	0.669	12	0.000	0.701	1
0.000	0.701	13	0.000	0.657	2
0.000	0.875	14	0.000	0.711	3
0.000	0.682	15	0.000	0.672	4
0.000	0.811	16	0.000	0.799	5
0.000	0.806	17	0.000	0.703	6
0.000	0.755	18	0.000	0.751	7
0.000	0.811	19	0.000	0.833	8
0.000	0.807	20	0.000	0.668	9
0.000	0.632	21	0.000	0.854	10
0.000	0.798	22	0.000	0.809	11

The item is considered consistent if the (Sig) value is (0.05) at the significance level of (0.05) "with 41 degrees of freedom

".Table (4) shows the internal consistency of the causal attribution scale for gymnastics coaches"

(Sig)	The correlation " values between the item score and the total score of the ".scale	s	(Sig)	The correlation " values between the item score and the total score of ".the scale	s
0.000	0.635	11	0.000	0.606	1
0.000	0.919	12	0.000	0.831	2
0.000	0.663	13	0.000	0.659	3
0.000	0.712	14	0.000	0.729	4
0.000	0.733	15	0.000	0.652	5
0.000	0.812	16	0.000	0.743	6
0.000	0.691	17	0.000	0.819	7
0.000	0.877	18	0.000	0.805	8
0.000	0.781	19	0.000	0.714	9
0.000	0.856	20	0.000	0.666	10

✧ "The item is considered consistent if the (Sig) value is (0.05) with degrees of freedom $n - 2 = (38)$ and a significance level of (0.05) Statistical reliability of both scales under investigation was verified by using their application scores on a sample of 43 coaches, through the calculation of the Cronbach's Alpha coefficient. The coefficient was found to be 0.819 for the irrational thoughts scale and 0.822 for the causal attribution scale, with a significance level of (0.05) and 41 degrees of freedom .

✧ To assess the suitability of the scales for gymnastics coaches, the scores of the sample were statistically verified by calculating the indicative normal distribution coefficient, as shown in the results of Table":(5)

"Table (5) shows the final statistical parameters and the values of the normal distribution for the two scales".

Skewness	Standard deviation	Mean	"Total score"	"Number of items"	"Number of coaches in the sample"	"Name of the scale"
0.587	1.12	34.28	66	22	43	"Irrational Thoughts Scale for Gymnastics Coaches"
0.169	1.351	35.47	40	20	43	"Causal Attribution Scale for Gymnastics Coaches"

"Normal distribution symmetry, with the condition that the skewness value should be between +1 and -1."

After completing the construction of both scales in their final forms (Appendices 1 and 2), with a total score for the Irrational Beliefs Scale ranging from 22 to 66 and a hypothetical mean of

44, and a total score for the Attribution Scale ranging from 20 to 60 with a hypothetical mean of 40, it was observed that the higher a coach's score on these scales, the higher the level of the undesired trait they exhibited.

The researcher initially applied these scales to the original research population of 18 coaches to identify those whose levels of the two traits exceeded the hypothetical mean for each respective scale. Based on this, 12 coaches were selected for the primary application sample (the experimental research group), as they displayed varying degrees of these two undesirable traits. This number was significant in comparison to their total population and warranted further study. Additionally, this diagnostic measurement was used to design the psychological counseling program sessions, which aimed to reduce irrational beliefs and causal attribution tendencies among the gymnastics coaches at the National Center for Sports Talent Development. Each counseling session in the program included three items from each scale.

The steps in developing the counseling program plan included the following:

- Identifying the specific needs for reducing the level of irrational beliefs and causal attribution among gymnastics coaches at the National Center for Sports Talent Development.

- Selecting the priorities for reducing irrational beliefs and causal attribution among these coaches.

- Defining and writing the objectives of the psychological sports counseling program, aimed at reducing irrational beliefs and causal attribution among these coaches.

- Developing strategies and techniques to achieve the goals of the sports psychological counseling program, focusing on clarity in presentation and minimizing detailed explanations during the counseling sessions.

- Evaluating the outcomes of the psychological sports counseling program aimed at reducing irrational beliefs and causal attribution among these coaches.

- Implementing the applications of the psychological sports counseling program.

The application of the counseling sessions in this program, aimed at reducing irrational beliefs and causal attribution among gymnastics coaches at the National Center for Sports Talent Development, proceeded as follows:

- 1 .Prepare a dedicated space for the gymnastics coaches at the National Center for Sports Talent Development, ensuring comfort in a quiet atmosphere and eliminating any distractions or factors that may interfere with the counseling environment and information reception.

- 2 .The duration of each counseling session was 25 minutes.

- 3 .The total number of counseling sessions was 7, with one session held each week on Saturdays, during their training days at the National Center for Sports Talent Development.

- 4 .The counseling sessions of the program aimed at reducing irrational beliefs and causal attribution levels among the gymnastics coaches at the National Center for Sports Talent Development were conducted over a period of 7 weeks.

- 5 .The counseling sessions included two primary psychological counseling components aimed at reducing irrational beliefs and causal attribution through the following applications:

- Challenging Irrational Beliefs: Using evidence and logic to question these beliefs and prove their inaccuracy.

- Replacing Irrational Beliefs: Substituting irrational thoughts with more realistic and positive ones.

- Challenging Unhealthy Patterns: Discussing unhelpful attribution patterns and analyzing the evidence related to them.

- Adopting More Realistic Attribution Patterns: Encouraging balanced and realistic thinking about causes.
- Self-Awareness Training: Helping coaches increase their awareness of their thoughts and causal attributions.
- Critical Thinking Training: Enhancing the ability to think critically and apply logical analysis.

- Practical Application: Practicing the new strategies in daily life and reviewing outcomes. The research experiment began with pretests of the two studied phenomena on Saturday, December 2, 2023, using paper-and-pencil tests administered directly to the 12 gymnastics coaches at the National Center for Sports Talent Development. After each coach completed their responses, their answer sheets were collected for data extraction according to the following:

- The weight score for each response option was calculated using a three-point scoring key.
- The total score obtained by each responding coach on each scale was calculated by summing the scores of the item weights.
- The data was organized in paper forms for statistical processing.

Following this, the psychological counseling program aimed at reducing irrational beliefs and causal attribution was implemented from Saturday, December 9, 2023, to Saturday, January 13, 2024. The experiment concluded with post-testing on Sunday, January 13, 2024, under the same conditions and procedures as the pretest. Research results were analyzed using SPSS to calculate percentages, mean scores, standard deviation, skewness coefficient, Pearson correlation coefficient, Cronbach's alpha, and t-tests for both dependent and independent samples.

Phenomena	Unit of measurement	Number	Arithmetic mean	+ Standard deviation	Liveen) (	(Sig)	Difference
Irrational Beliefs of "Gymnastics Coaches"	Degree	12	48.67	2.425	0.897	0.528	Not "significant"
Causal Attribution of "Gymnastics Coaches"	Degree	12	51.08	4.055	0.189	0.199	"Not significant"

Table (6) shows the results of the pre-tests for the experimental research group

The variance homogeneity of the experimental group was tested using Levene's test, where the (Sig) value was 0.05 with 11 degrees of freedom."

"Table (7) shows the results of the pre-test and post-test for the experimental research group."

The two phenomena	Unit of measurement	Number	Comparison	Arithmetic mean	+ Standard deviation	F	F h	(t)	(Sig)	Difference
Irrational Thoughts	Degree	12	Pre-test	48.67	2.425	13.75	2.768	17.211	0.000	Indicativ
			Post-test	34.92	1.165					
Causal Attribution	Degree	12	Pre-test	51.08	4.055	15.25	4.957	10.658	0.000	Indicativ
			Post-test	35.83	1.697					

The statistical difference is significant as the (Sig) value is (0.05) with 11 degrees of freedom.

Discussion

Referring to the results presented in Table (7), the positive impact of the experimental variable—the psychological counseling program—becomes evident in reducing the post-test values for both irrational beliefs and causal attribution compared to the pre-test levels of these two phenomena among the gymnastics coaches in the experimental group. The researcher attributes this result to the constructive role of the psychological counseling program, designed to lower levels of irrational beliefs and causal attribution among the gymnastics coaches at the National Center for Sports Talent Development. In the program, the researcher took into account the specific nature of their coaching duties, their relationships with the center's administrators and their athletes, as well as the demands of their training and competitive environment. Fundamental concepts of sports psychology were incorporated into these psychological therapy sessions, which contributed to a shift in the types of thoughts they held, reducing levels of irrational beliefs and causal attribution in the post-tests.

This shift helped reduce their tendency toward irrational thoughts, such as feeling that others were attempting to control their decisions, harboring ill will towards them, impeding their success, suspecting their intentions, disrespecting or mocking their ideas, and perceiving unfairness in the implementation of their ideas. As a result, the coaches displayed a more realistic approach to thinking, based on the available resources and conditions at the center. They became more inclined to share ideas for the collective success of the National Center for Sports Talent Development, minimized their reliance on narcissistic, illogical ideas, and grew more confident in the sincerity of others toward their rational ideas and the presence of noble values.

The researcher also attributes this outcome to the positive role of the counseling program, which aimed to reduce irrational beliefs and causal attribution levels, enabling coaches to overcome discomfort arising from perceived low engagement from the center's administrators and gymnasts or the feeling that others were waiting to criticize their training with talented athletes. The program helped diminish feelings of marginalization, increase their

self-confidence, assume responsibility for their decisions without attributing failures to external sources, strengthen their trust in others, and foster a commitment to serious work in training to achieve their goals. This was facilitated by their attraction to alternative response options that helped reduce the levels of the two studied phenomena.

"An individual's self-esteem, self-perception, self-evaluation, behavior, and awareness of their abilities and potential make them capable of determining their future behavior. When individuals accept themselves, they continue to develop and enhance their abilities and potential. However, if they lack self-acceptance, they tend to direct their energy toward destruction rather than construction. Thus, self-esteem is considered a dynamic component capable of altering, regulating, and controlling individual behavior." (Rabee, 2019, p. 19)

"The ability to accurately perceive emotions in various situations involves staying at the peak of one's reactions to those situations, challenges, and people. On the other hand, high self-awareness requires a willingness to tolerate the impact of emotions that may be negative." (Al-Khalidi, 2014, p. 34)

"External events may not be harmful to the individual by themselves, but the extent of the individual's impact by them and their reactions to these events make them appear as such." (Al-Khateeb, 2014, p. 393)

"Learned helplessness refers to behavioral and physiological outcomes arising from exposure to painful, uncontrollable events. These outcomes do not occur due to the events themselves but are instead caused by a lack of behavioral control." (Al-Farhati, 2012, p. 57)

Learned helplessness is not an inherent trait but rather a result of painful situations encountered and experienced in one's environment. It depends on the individual's readiness and how they handle these experiences, ultimately becoming a condition that is acquired." (Jameel, 2009, p. 91)

"Inner conflicts, desires, and unconscious tendencies are as much concerned with an individual's surrounding reality, particularly the social, cultural, and historical aspects." (Jabr, 2022, p. 477)

"Athletes can practice meditation techniques and concentration exercises to calm the mind and increase awareness of the present moment during training, purposefully directing their senses to focus on breathing, movement, and visual and auditory sensations during their training, thus activating their perceptions while calming the mind to avoid mental fatigue." (Keng & Others, 2011, p. 1043)

"Mental processes are only practiced through training and practice, which work to engage the mind to practice the latent skills within it. Mental growth is highlighted by a rich, stimulating, and healthy environment that contains various experiences, situations, and stimuli." (Hameed, 2007, p. 22)

"The brain captures stable information from the environment in alignment with what an individual expects to see in a given context. However, such processes can be stimulated based on prediction, and this type of perceptual prediction produces mental perceptions by comparing incoming information from the external environment with pre-existing brain schemas." (Abu Seif, 2005, p. 86)

"Psychological counseling can help individuals learn relaxation, meditation, and concentration techniques, improve mental organization and positive thinking skills, and develop strategies to cope with mental distraction and psychological stress." (Piet & Hougaard, 2011, p. 1335)

"The counseling process plays an important role in increasing an individual's awareness, as it is a learning process concerned with modifying people's thoughts, feelings, and behaviors toward themselves, others, and the world in which they live. Thus, a group that undergoes a successful counseling experience experiences growth and development." (Kafafi, 2011, p. 258)

"Positive thinking does not mean overlooking the negative aspects of real life or the difficulties expected to occur. Instead, it involves examining them thoroughly from all perspectives and possibilities, confronting them rather than submitting passively, and without excessive optimism that leads to ignoring reality." (Dendy, 2013, p. 2)

Conclusions

1. The measures for irrational thoughts and causal attribution among coaches at the Center for Gymnastics Sports Talent Care meet the scientific standards and criteria required for accepting psychometric tools in sports psychology

2. The development of a psychological counseling program aimed at reducing levels of irrational thoughts and causal attribution is well-suited for coaches at the Center for Gymnastics Sports Talent Care

3. The psychological counseling program assists in reducing levels of irrational thoughts and causal attribution among coaches at the Center for Gymnastics Sports Talent Care

Recommendations

1. Emphasis on psychometric measurement, according to the guidelines of sports psychology, is essential for monitoring the state of coaches at the Center for Gymnastics Sports Talent Care. This approach is crucial to prevent the escalation of undesirable psychological phenomena and to develop counseling programs aimed at reducing or limiting these phenomena

2. Psychological counseling programs within the applications of sports psychology should be designed based on diagnosing needs and addressing them in ways that align with delivering logical, effective counseling services. Such services should cater to the needs of the coaches by helping them alter beliefs and attitudes that contribute to the emergence of undesirable behaviors in training and competitive environments

Appendix (1) illustrates the final version of the irrational thoughts scale for coaches at the "
".Sports Talent Care Center in gymnastics

S	"Paragraph Statements"	Always " applies "to me	Sometimes " applies to "me	Never " applies "to me
1	I feel that others want to control my decisions " ".at the Talent Care Center			
2	I feel that others want to control my decisions " ".at the Talent Care Center			
3	I feel that others are trying to hinder my " ".success at the Talent Care Center			
4	I feel that others think badly of me at the " ".Sports Talent Care Center			
5	I am certain that if only my ideas were " implemented, success at the Sports Talent Care ".Center would be inevitable			
6	I believe that I have ideas that could reshape " ".the gymnastics landscape in Iraq			
7	I trust that my ideas are unique and logical, " and they do not require revision to achieve success and progress at the Talent Care ".Center			
8	I view the other coaches as accidental " coaches, and they will never reach the ".eloquence of my ideas			
9	I feel that my ideas are not respected at the " ".Talent Care Center			
10	I have strong confidence in my abilities and " competence to do anything necessary to achieve victory in competitions, no matter the ".cost			
11	I believe that the administrators of the center " ".intentionally undermine the value of my ideas			
12	I feel that the administrators of the Sports " ".Talent Care Center mock my ideas			
13	I view the ideas of others as mere quotes with " ".no real value in actual reality			
14	I feel a lack of trust towards others at the " ".Talent Care Center			
15	I feel that justice is just a word for the " administrators of the Sports Talent Care ".Center			

16	I believe that the administrators of the Sports " Talent Care Center attribute my ideas to ".themselves without any rightful reason			
17	I believe that all the administrators of the " ".Sports Talent Care Center are deceitful			
18	I feel that the smiles of others towards me at " ".the Sports Talent Care Center lack sincerity			
19	I feel that sincerity of intentions is lacking at " ".the Sports Talent Care Center			
20	I feel injustice knowing that the " administrators of the Sports Talent Care Center hold the decisions regarding the renewal of my ".contract			
22	I believe that it is the distant past that brought " me among those who do not deserve my presence at the Sports Talent Care Center in ".gymnastics			
23	I believe that noble values are starting to " disappear at the Sports Talent Care Center in ".gymnastics			

Appendix (2) illustrates the final version of the Causal Attribution Scale for coaches at the " ".Sports Talent Care Center in gymnastics

S	"Paragraph Statements"	Always applies to me	Sometimes applies to me	Never applies to me
1	It bothers me that the administrators of the " Sports Talent Care Center and the gymnasts there have little interaction with the knowledge ".I possess about competition			
2	I feel that many people harbor resentment " ".towards me at the Talent Care Center			
3	I feel that others are looking for mistakes in " ".my training of the talented athletes			
4	I feel that I am not successful in utilizing the " ".art of dealing with others			
5	I believe that the interference of the center's " administrators is the cause of the losses in the ".competitions			
6	I notice that the loss of my athletes in " competitions leads me to exhibit nervous ".behaviors with my family			

7	I believe that the decline in the performance " of the Sports Talent Care Center is due to a lack of trust in the effectiveness of my ".training			
8	I find that no matter how much effort I put " into training, it will not be effective in ".achieving victory with such players			
9	I believe that achieving top positions in " competitions depends more on luck than on the ".actual abilities of the players			
10	I feel marginalized when decisions are made " regarding the participation of the center's ".athletes			
11	I believe that everyone at the center does not " ".deserve to know me			
12	I believe that the opportunities for success in " ".contracts are not equal among the coaches			
13	I expect that my failure in the upcoming " competitions will lead to failure in future ".competitions			
14	I find it difficult to manage unexpected " ".problems in training and competition			
15	I believe that discussing the details of the " upcoming competition in advance is a waste of ".time			
16	I feel dissatisfied when the administrators of " the Sports Talent Care Center focus on my ".information about the competition			
17	I feel comfortable when getting closer to the " decision-makers at the Sports Talent Care ".Center			
18	I feel that the training session duration does " not suit the specific needs of the talented ".gymnasts			
19	The centralization of the instructions at the " ".Sports Talent Care Center restricts me			
20	I only trust my ability to overcome the " ".mistakes of the center's losses in competitions			

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The impact of special exercises using the (Wheatley's) strategy on learning to perform the underhand serve and reception skills in volleyball for students

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Abstract:

Workers in the field of educational sciences seek to advance the level of their students, and one of the most important of these sciences is sports sciences, which have their own methods and techniques in line with the levels of each age stage, which requires the subject teacher to be well versed in all modern teaching methods and techniques. The research aimed to prepare special exercises in accordance with the strategy of Wheatley in learning the skills of transmission and receiving volleyball for students of Najaf High School for the distinguished, as well as knowing the preference of using (Wheatley strategy or the approach followed) in the research variables as well as to choose the school team participating in the Najaf Education Championship, and the researchers used the experimental approach with two control and experimental groups with pre- and post-tests and conducted two tests (transmission from the bottom, receiving the transmitter) and the research sample was represented by the fifth preparatory grade school students for the academic year 2023-2024, which numbered 24 students from a community of origin numbering 72 students, as they were selected in a simple random way (lottery) and were divided into two control and experimental groups, and each group (12) students' The statistical bag (SPSS) was used to extract the results, and after presenting and discussing the results, it was concluded that there is a positive impact of Wheatley's strategy in learning the skills of transmission and receiving volleyball between the pre-post-tests for both groups as well as between the control and experimental groups and for the benefit of the experimental group, and the researchers recommend the need to use the Wheatley strategy on other games, and pay attention to updating teaching methods and techniques in line with age groups.

Keywords: Whitley strategy, basic volleyball skills

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Introduction:

The development of students' abilities largely depends on the extent of their interaction with the teaching method used and their response to it. It is undoubtedly a significant question that crosses the mind of a physical education teacher before entering the classroom: how can the lesson material be effectively conveyed to the students? That is, what is the method and approach that delivers the content to the learner and engages them with the teacher and their peers in comprehending, understanding, and applying the lesson's content? The teacher's goal is not only to provide the learner's mind with information but also to assist them in developing scientific thinking and forming a flexible mindset that enables them to understand the surrounding world, using methods and techniques that actively and positively involve the learner in the learning process.(Eisa & Qasim, 2024)

Despite the numerous studies that focused on teaching methods, which had a significant impact on enhancing the educational process, the research that addressed the use of teaching methods mostly examined repetitive approaches and demonstrated their success to a certain extent.(Mondher et al., 2023)

The game of volleyball has captivated many people of both genders in their love for learning and practicing it, whether in educational institutions or outside of them. Therefore, the process of enhancing this game and elevating its performance to the best level is what the teacher or coach strives for. (Kareem, 2023)

Since schools are one of the main bases for supplying sports clubs with players, this requires finding teaching alternatives that align with the various skills of volleyball in general and are suitable for the age groups of middle school students in particular. (Munaf et al., 2021)

Hence, the necessity arose to conduct such a study to understand the impact of applying Wheatley's strategy in learning the underhand serve and receiving the serve in volleyball, due to the importance of these two skills in student competitions and the scarcity of field studies in these skills.(Nashwan, 2024)

Students now need modern teaching methods (such as the WIT strategy), which are based on constructivist theory that focuses on the learner's role in knowledge construction, in addition to encouraging learners to take responsibility for their own learning, as they act as explorers. Implementing a new strategy involves a change in beliefs about knowledge and science. (Mousa et al., 2019; Muhammad et al., 2021)

In this strategy, participation is positive, and there is enhanced interaction among learners, along with the appropriate use of social skills (cooperation) required for collaborative work, including participation in competition and dialogue among groups. (Zaghloul, 2015)

Through the observation of the researchers as physical education teachers and their watching of most physical education lessons in other schools, along with inquiries from some experts and practitioners in the field of physical education, it has been noted that the common method for teaching various skills in volleyball is the American style, which requires the teacher to be a decision-maker imposing it on the student. This is not a criticism of this method

or an attempt to downplay its advantages, but our current era is one of knowledge prosperity and educational work, and this development must be kept up with.

Previous studies have confirmed that there are many teaching methods, each with its own special place in terms of objectives and characteristics, and they play an effective role in correcting mistakes and investing time and effort in the learning process. However, these methods are often neglected by most physical education teachers.

The research problem lies in the weak technical performance in executing the underhand serve and receiving in volleyball among students, due to poor skill performance (technique) and the lack of new strategies that facilitate the teacher's work and engage students in learning. Furthermore, there is a scarcity of studies related to teaching methods in volleyball for students. This has led the researchers to study this issue, which requires further investigation to uncover scientific facts aimed at achieving better performance, especially concerning the selection of the school team participating in the education championship for the year 2023-2024. Consequently, the researchers decided to prepare educational units based on the Wetley strategy for learning the technical performance of these two skills in volleyball.

However, the importance of the research lies in understanding the effect of using the Wetley strategy in learning the artistic performance in the skill of underhand serve and receiving the serve, in order to identify one of the important pillars and to explore the effective role of learning these skills in volleyball, especially when the learner has an important motivation, which is participating in the educational championship for volleyball races for the preparatory stage. Many previous studies have addressed topics related to teaching methods and volleyball in particular, among which the most important are:

The study (Amer, Khalil 2022) aimed to prepare educational units using the JISCO strategy in learning the skill of spike in volleyball and to identify its impact on learning the spike skill in volleyball. The researchers used the experimental method with a design of experimental and control groups. The research community consisted of male students in the second stage at the College of Physical Education and Sports Sciences / University of Baghdad for the academic year 2021-2022, totaling (385) students. A sample was randomly selected through a lottery. One class was chosen as the experimental group with (25) students, and another class was chosen as the control group with (27) students. Additionally, (15) students were randomly selected for the exploratory trial procedures. The researchers chose the spike skill, conducted pre-tests, ensured the equivalence of the sample, and then applied the strategy and conducted post-tests to obtain raw data and statistically process it to extract and interpret the results. The researchers concluded that the strategy had a positive role in achieving significant results for the experimental group, as well as its moral role in considering individual differences. The researchers recommended the necessity of using the strategy .

The study (Saadoon, Saleh 2020) aimed to modify a test for the cognitive achievement of certain technical skills in volleyball for second-year students at the College of Physical Education and Sports Sciences, in addition to identifying the impact of using educational units with the strategy of electronic concept maps on the level of cognitive achievement of some technical skills in volleyball among the research sample.

The researchers adopted the experimental method, and the sample size was (15) students for each experimental and control group. The researchers implemented their main experiment using the electronic concept map strategy with one educational unit per week for a duration of (8) weeks. The results of the study indicated a significant effect in the cognitive achievement

test results between the two groups in favor of the experimental group that applied the electronic concept maps. (Saadoon and Saleh, 2020)

As for the study (Khamas, Subhan 2019), the use of exercises related to advanced educational aids, technology, and modern techniques that align with the developments in the field of learning is of great importance in developing the basic skills of volleyball for beginner students. The researchers found a weakness in learning and a lack of interest in learning the basic skills of volleyball. Based on the researcher's experience as a physical education teacher and observing most physical education teachers, they found a weakness and difficulty in learning the basic skills of volleyball. Therefore, the researchers decided to use educational aids. The research sample consisted of students from the Baghdad Al-Karkh Education Directorate, totaling (3200) students for the academic year 2018-2019, and Al-Balat Al-Shuhada Intermediate School for Boys was selected, located in the Al-Risala area.

The study by Ismail and Awad (2019) aimed to evaluate the learning performance of some basic volleyball skills according to the cognitive style of risk-taking, using the content of the seven-stage learning cycle. The researchers employed an experimental method and used a sample of 20 fourth-year secondary students with an average age of 14 years, selected intentionally after being sorted according to a questionnaire designed for this purpose. Various means, tools, and tests were utilized, the most important of which was the use of the learning content from the seven-stage education cycle, which was integrated with the volleyball skills addressed in the research within a learning curriculum lasting 8 weeks, with two hours per week, each unit lasting 45 minutes. After completing the curriculum and conducting pre- and post-tests, the results were statistically analyzed. Consequently, the researchers reached several conclusions, including the impact of the risk-taking cognitive style on the sample regarding the content of the seven-stage learning cycle, which reflected on the values of the volleyball skills addressed in the research. Among the recommendations was the importance of continuing to evaluate performance based on experiential learning. (Ismail and Awad, 2019)

The study (Khalil, Mohammed 2018) aims to prepare an educational curriculum using the generative learning strategy for individuals with cognitive styles (controlled-flexible) in developing the accuracy of certain technical skills in volleyball for the research sample. In addition, it seeks to identify the impact of the educational curriculum using the generative learning strategy for individuals with cognitive styles (controlled-flexible) in developing some technical skills in volleyball. To achieve this goal, the researchers used an experimental method with a factorial design (2×2), and the research sample was selected from the age group of (12-14) years within the National Center for Sports Talent Development in volleyball, consisting of (48) players, while the research sample included (28) players. After selecting the skills and tests and conducting a pilot experiment, the validity of the tests and the educational curriculum was confirmed, and appropriate statistical treatments were conducted. The research reached some conclusions, the most important of which is that the educational curriculum (generative learning strategy and the curriculum followed by the National Center for Sports Talent Development in volleyball) is effective in developing the performance accuracy of the three skills under study with varying differences. (Khalil and Mohammed, 2018)

After this review of the most important previous studies related to the research topic, it is necessary to present the logical reasons for benefiting from these studies. Some of them addressed the appropriate strategies with the selected samples, some discussed how to choose the samples, some selected the variables specific to each skill in volleyball, and finally, the

studies indicated how to analyze and discuss the results to obtain conclusions and then recommendations for each study. The researchers have utilized previous studies in determining the sample as well as conducting tests and exploring what is new and has not been studied in previous research.

Procedures:

All scientific research resorts to selecting an approach that fits the nature of the problem in solving its issues. Accordingly, the researchers used the experimental method with two equivalent experimental groups due to its suitability for the nature of the problem to be solved. "The experimental method represents the most accurate approach to solving many scientific problems in a practical and theoretical manner" (Alawi and Ratib, 1999). Moreover, the researchers "attempt to introduce a characteristic or variable that can change the condition of the sample individuals or the thing that needs to be changed" (Mahgoub, 2002).

The research community consisted of 24 students from the fifth grade of the preparatory stage for the academic year 2023-2024, selected from an original population of 72 students using simple random sampling (lottery). They were divided into two groups: a control group (the conventional curriculum) and an experimental group (the Weitley strategy), each consisting of 12 students.

Before applying the strategy for the research sample, two important steps must be taken: the first is to establish homogeneity among the sample members. The skewness coefficient was calculated to find the homogeneity among the sample members, indicating a normal distribution within the bell curve of the anthropometric measurement variables, as shown in Table .(1)

Table (1) Shows the homogeneity of the sample members

Statistical features Variables	measuring unit	Arithmetic mean	Mediator	standard deviation	Torsion coefficient
height	cm	171	171.5	1.88	0.525
Bloc	kg	70.33	70.5	1.79	- 0.180
Chronological age	year	17.44	17.5	2.11	0.245

Table (1) shows the values of the mean, standard deviation, and skewness for the anthropometric variables. The mean values are greater than the standard deviations, indicating that there is no dispersion among the research sample individuals. The skewness values ranged between (0.525 to -0.180), meaning they were confined within (± 1), which indicates that they are within the normal distribution.

The researchers conducted the exploratory experiment on Monday, February 19, 2024, at 10:00 AM, during the third lesson period, on the volleyball court of Al-Najaf Al-Ashraf Secondary

School for the Distinguished. During this session, the two specific tests for the skills of serving and receiving were applied, in addition to experimenting with all the exercises prepared according to the Wheatley strategy on four students from outside the research sample, but from the same preparatory stage. All observations related to the tests, tools, cameras, as well as the exercises and records related to the educational units were documented.

The purpose of conducting the exploratory experiment by the researchers is to identify the following:

- The suitability of the place where the main experiment will take place.
- Ensuring the suitability of the devices and tools used in the tests.
- Identifying the difficulties that the researchers will face in the main experiment.
- Defining the duties of the assisting team.
- Determining the locations for placing the cameras, their height, and their distance from the field of movement for the purpose of filming and presenting it to the experts.
- Applying all the exercises prepared by the researchers to assess their appropriateness and the number of repetitions for each performance.

After that, the researchers conducted the main experiment on Thursday, February 22, 2024, at 10:00 AM, during the third lesson period as indicated in the class schedule, on the volleyball court of Al-Najaf Al-Ashraf Secondary School for the Distinguished. The two specific tests for the skills of serving and receiving were applied, and all conditions for the students were established. The tests were as follows:

Test One / Accuracy Assessment Test for Serving Skill: (Al-Wazir and Taha, 1999, p. 178)

Objective of the test: To evaluate and measure the accuracy of the serving skill.

Tools used: Volleyball court, 5 volleyballs, and colored tape to divide the opposing court areas.

Performance specifications: The tested student stands in the middle of the end line of the court, 9 meters away from the net, holding the ball to perform the serve so that the ball crosses the net into the designated half of the court.

Performance conditions: If the ball touches the net and crosses into the designated half of the court or goes out of the court boundaries, the attempt is counted (from the five attempts).

Recording: The tester receives a score based on the area where the ball lands for each successful serve, with each tester having 5 attempts and the scores distributed across areas from 1 to 4 points, resulting in a maximum score:

The maximum score for this test is 20 points, noting that if the ball lands on a line separating two areas, the tester receives the score for the higher area, as illustrated in Figure 1.

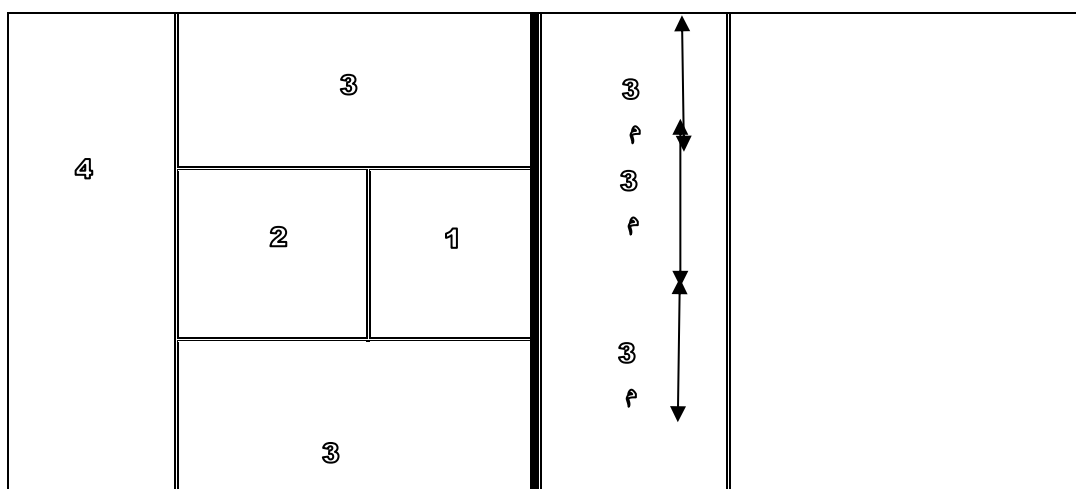


Figure (1) illustrates the measurement of the ability to send to specific areas.

Test Two / Accuracy Assessment Test for Ball Reception Skill: (Al-Wazir and Taha, 1999, page 180)

Objective of the test: To evaluate and measure the accuracy of reception.

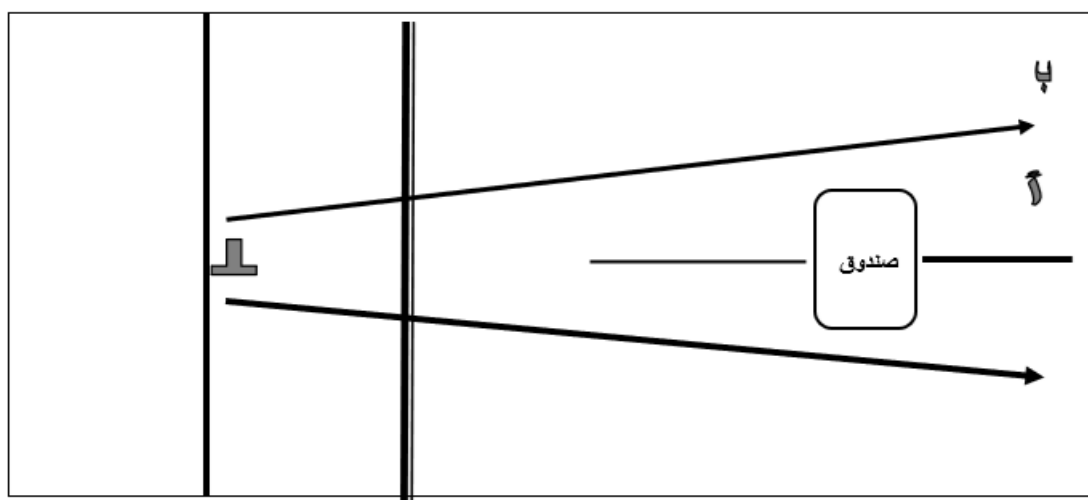
Tools used: Volleyballs, a legal volleyball court planned as shown in Figure (2), a table.

Performance method: The tester stands in area (A) and receives the ball from the teacher who stands on the other side of the court, then repeats the same performance from area (B). The tester performs five attempts from each area and must direct the ball to center (2) towards the table where the tester stands (as a target).

Conditions: The tester must adhere to receiving from the designated area and directing the ball to the target.

Scoring: A correct ball directed to the table or target (3 points), a correct ball that touches the edges of the target or table (2 points), a ball that is far from the table or target (zero). Since the scores are distributed across the areas from (zero-3) points from (10) attempts (5 at (A) and 5 at (B)), the maximum score is:

Maximum score: The total score has a maximum limit of 30 points.



The area is divided into A and B, measuring 3 m x 4.5 m.

Figure (2) illustrates the measurement of the ability to receive the transmission .

Note (1): The teacher should try as much as possible not to vary the serve hits .

Note (2): The performance of both tests is recorded to be presented to the experts, numbering three, for performance evaluation .

The researchers then resorted to verifying the equivalence of the experimental and control groups, "as the researcher should form equivalent groups at least concerning the variables related to the research" (Vandalin, 1985). To control the variables affecting the accuracy of the research results and to attribute the differences in effect solely to the independent variable (exercises according to the Whitley strategy), the researchers conducted the equivalence process between the two groups in the pre-test using the (T-test) for independent samples regarding all the variables investigated in the study, as shown in Table .(2)

Table (2) shows the equivalence process between the pre-tests of the research groups.

Search variables	measuring unit	Experimental group pre-test		Control group pre-test		t	Sig	Type of significance
		mean	sd	mean	sd			
Evaluating transmission performance from below	point	4.25	1.65	4.26	1.36	0.415	0.670	Insignificant
Accuracy of transmission performance from below	point	10.41	1.45	10.45	1.65	0.491	0.628	Insignificant
Evaluation of transmitter reception performance	point	3.24	1.33	3.23	1.22	0.357	0.727	Insignificant
Accurate transmitter reception performance	point	15.17	1.062	15.19	1.75	0.766	0.459	Insignificant

Significant at percentage error $\geq (0.05)$ In front of a degree of freedom(22)

The results shown in Table (2) indicate that the two groups are equivalent in all research variables, as there are no significant differences among the sample members .

Application of Exercises Using the Wheatley Strategy:

The exercises prepared by the researchers were implemented starting from Monday, February 26, 2024, for a duration of six weeks, with two educational units per week until Thursday, April 4, 2024. The unit on Monday represents the official class for volleyball within the class schedule, while the second educational unit was conducted on Thursday as an additional class agreed upon with the research sample (the experimental and control groups) and the subject teacher after the lessons on that day at 12:15 PM. The researchers ensured that the exercises were tailored to the sample members and worked on a combination of exercises that could help learners understand and grasp the skill after each repetition. The Wheatley strategy consists of three main stages:

1. Task Stage.
2. Cooperative Groups Stage.
3. .Participation Stage.

In the Task Stage, the learner faces a problem or task that needs to be completed, which is engaging for learning and provides the essential requirements for the learner to solve the problem and organizes ideas sequentially to address it .

In the Cooperative Groups Stage, learners are divided into small groups that collaborate, compete, and exchange ideas among themselves, with the teacher encouraging cooperative work among the learners while committing to providing guidance and direction.

However, regarding the participation phase, the entire class transforms into a single group where the students work together to find solutions and changes they have reached through competition and dialogue among the groups, under the supervision of the teacher. The application of the exercises included (12) educational units, with two educational units per week and a duration of (40) minutes per unit. The table below provides details of the educational unit and the program's schedule.

Table (3)
Details of the educational unit supported by images in learning both skills.

Time distribution	the details	ت
5m	View educational images and student tasks in collaborative groups	1
10m	Warm-up and general conditioning is 5 minutes and special conditioning is 5 minutes	2
20m	Practical application of five exercises and each exercise lasts 4 minutes	3
5m	Conclusion	4

A colored illustrated booklet was created containing detailed information for each skill, from its preparatory part to the main part and then the concluding part. This was also presented to the evaluating experts who assessed the students' performance in both tests.

Table (4)
Time distribution of the educational program.

Notes	Extra class Thursday	Main class Monday	Weeks
This week is devoted to the skill of serving	2024/2/29	2024/2/26	The first week
This week is devoted to receiving the transmission	2024/3/7	2024/3/4	second week
The first unit is dedicated to transmitting and the second unit is allocated to receiving the transmission	2024/3/14	2024/3/11	the third week
One exercise for sending and the other for receiving	2024/3/21	2024/3/18	fourth week
All exercises are common for both skills	2024/3/28	2024/3/25	The fifth week
All exercises are common for both skills	2024/4/4	2024/4/1	the sixth week

After that, the researchers, with the help of the supporting work team, conducted the post-tests after completing the implementation of the WITTE strategy on Monday, corresponding to 8/4/2024. The test was conducted under the same conditions as the pre-tests.

Results and Discussion:

Presentation of the results of the pre and post-tests for the experimental group:

Table (5)
Shows the significance of the differences between the pre and post-tests for the experimental group.

Search variables	meas ruin g unit	The pre- experimental group		Experimental group posttest		t	Sig value
		mean	sd	mean	sd		
Evaluating transmission performance from below	point	4.25	1.65	7.35	1.89	3.69	0.000
Accuracy of transmission performance from below	point	10.41	1.45	13.65	2.03	4.68	0.000
Evaluation of transmitter reception performance	point	3.24	1.33	6.88	2.75	3.87	0.005
Accurate transmitter reception performance	point	15.17	1.062	19.73	1.84	3.46	0.002

Significant at error rate α (0.05) and in front of degree of freedom(11)

Presentation of the results of the pre and post-tests for the control group:

Table (6)

Shows the significance of the differences between the pre and post-tests for the control group.

Search variables	measuring unit	Control group pre-test		Control group posttest		Calculated t value	Sig value
		mean	sd	mean	sd		
Evaluating transmission performance from below	point	4.26	1.36	6.92	1.51	3.11	0.007
Accuracy of transmission performance from below	point	10.45	1.65	13.22	1.98	3.82	0.002
Evaluation of transmitter reception performance	point	3.23	1.22	6.09	2.11	3.23	0.031
Accurate transmitter reception performance	point	15.19	1.75	17.75	2.00	3.84	0.022

Significant at error rate α (0.05) and in front of degree of freedom(11)

Presentation of the results of the post-tests between the tests for the experimental and control groups:

Table (7)

Shows the significance of the differences between the post-tests for the experimental and control groups.

Search variables	measuring unit	Experimental group posttest		Control group posttest		Calculated t value	Sig value
		mean	sd	mean	sd		
Evaluating transmitter performance from below	point	7.35	1.89	6.92	1.51	2.65	0.025
Accuracy of transmission performance from below	point	13.65	2.03	13.22	1.98	1.63	0.517
Evaluation of transmitter reception performance	point	6.88	2.75	6.09	2.11	2.84	0.045
Accurate transmitter reception performance	point	19.73	1.84	17.75	2.00	3.05	0.032

Discussion of the results:

The results in Tables (5) and (6) showed significant statistical differences between the pre-and post-tests for both the experimental and control groups. The researchers attribute this to the exercises prepared for the experimental group (Wheatley strategy) as well as to the exercises prepared by the subject teacher for the experimental group (the adopted method) . The researchers agree with Saad Mohsen regarding the improvement process for both the experimental and control groups, as he states, "Regardless of the differing opinions from the methodologies of their scientific and practical culture, the training program inevitably leads to the desired development, if based on a scientific foundation in organizing the training process and observing individual differences, as well as using optimal repetitions and effective inter-

rest periods, under the supervision of specialists in good conditions in terms of place, time, and tools used" (Ismail, 1996), which confirms the improvement of results for both groups .

As for the significance of the differences between the experimental and control groups in Table (7), there were significant differences in three values representing three variables, except for the variable of accuracy in performing the underhand throw, which was not significant.(Kazar & Kazim, 2020)

The researchers attribute the reason for this to the exercises designed according to the chosen strategy that aligns with the age stage of the research sample and to what was applied in the educational units according to the Witte strategy, as it resulted in the development of the technical performance of the students in both skills: underhand serve and reception of the serve. One of the reasons for the significant difference among the group members is due to the repetitions of the prescribed exercises according to the curriculum, which the students perform in the methodological educational units, (Mahmood & Kadhim, 2023) leading to a clear improvement in technical performance. Additionally, the repetitions help to solidify the motor program among the students and expand their perceptions and concepts in order to understand and clarify the skill. These results are consistent with the study by (Mohammed and Hassan, 2010) and the study by (Al-Dihani, 2009), where the results of the first study indicated that verbal explanation and model performance have a positive impact on the educational process, while the other study pointed out that problem-based learning develops learners' skills and enhances this type of learning's ability to think, research, and study, making the learner the center of the educational process and limiting the teacher's role to guidance and supervision. Thus, learners' skills develop through seeking solutions, and this type of learning provides characteristics that assist them in collaboration and leadership.(Easa et al., 2022)

The researchers adopted this strategy, which Muhammad Saad Zaghloul refers to as one of the models based on constructivist philosophy in education and teaching. It begins with tasks that involve a problematic situation that makes learners feel there is an issue, followed by their search for solutions through small, collaborative groups. The education concludes with the groups sharing their findings in a discussion. Accordingly, the model consists of three essential pillars: tasks for collaborative participating groups. (Zaghloul, 2015)

These exercises also contributed, according to the (Witly) strategy, to improving students' creative abilities, emphasizing meaningful learning based on understanding through the active role of students in learning and actual intellectual participation in the activities they engage in within collaborative groups. This led to increased effectiveness in the educational process, which in turn reflected in improved achievement and retention of the scientific material. At the same time, group discussions facilitate students' retrieval of information and knowledge among themselves, (Kadhim, 2023) leading to better retention of information (Muhammad & others, 2021). This result aligns with what "Abu Harja and others, 2001" indicated, that the use of educational technology leads to an increased retention of the information learned by students and solidifies it in their minds, reflecting on the learning process. The teacher achieved communication among learners by moving among them with guidance and direction, clarifying that the goal of this stage is for students to learn from one another and providing opportunities for all students to participate in competition and express their opinions.(Salih et al., 2024)

The researchers attribute the clarity of the differences in the post-test compared to the pre-test among the experimental group to the use of sequential images supported by the Witly strategy,

which was characterized by a rich vocabulary and content of direct and indirect information, its authentic expressive capabilities, and its realism represented in colors and image quality, as well as its ability to represent abstract reality that is difficult to perceive with the senses in a vivid and tangible way. Additionally, (Mahdi & Altay, 2023) it contained links that represent the division of each part of the body and explain the performance of these parts during the overall activity, which helped students comprehend and understand the facts and knowledge related to the performance of each part of the body during the technical stages of sending and receiving skills. All of this undoubtedly provided a good opportunity for students to learn and acquire complete knowledge and information about the skill. (Aldewan, 2015)

Conclusions:

- 1- The Witly strategy has a positive effect on the development of the technical performance of the sending and receiving skills in volleyball.
- 2- The strategy, through its steps and the accompanying booklet, contributed to forming an excellent image in the learners, which reflected on their technical performance.
- 3- The strategy's emphasis on teamwork, cooperation, and participation among students provided them with motivation to enhance learning.

Recommendations:

- 1- Utilize the Witly strategy in other games and activities due to its positive impact on the learners' technical performance.
- 2- Conduct workshops on teaching methods to assist physical education teachers in dealing with modern strategies.
- 3- Employ teaching methods and strategies to engage a large number of students to save time and effort for the instructor and to help develop cooperation, participation, and the exchange of ideas among students.

Appendix(1)

Exercises for transmitting and receiving skills

code	Exercise Content	Educational goal
P1	The learners stand in two groups, each group on the service line, and each learner performs the serving motion without using the ball.	Emphasizing performance correctly with a complete understanding of the performance
P2	The learners stand in two groups, each group on the service line, and each learner performs the serve using the ball.	Emphasizing performance correctly and directing the ball upwards
P3	The learners stand in two groups, each group on one side of the court, and each learner performs after taking a step and then executing the action.	Learning to feel the space and perform correctly
P4	The learners are divided into two groups separated by the net, performing the serve to the partner standing in front of them on the opposite court.	Directing the ball correctly

code	Exercise Content	Educational goal
P5	Each pair of learners stands in front of the wall and continuously hits the ball against the wall alternately, focusing on wrist movement and fully extending the hitting hand.	Learning the performance and emphasizing wrist movement without hitting the ball hard
P6	Students stand in two groups in front of the net, with serving from group A and receiving from group B, and vice versa	Teaching the skill of sending and receiving
P7	Three servers face three receivers, and the ball is directed randomly to their teammates, followed by a role exchange	Teaching the skill of sending and receiving
P8	Students stand on the side of the court, serving to the wall at a marked point, then running to receive the ball from the wall.	Learning to sense the space and perform correctly
P9	The learners are divided into four groups, each consisting of three learners, and the court is reduced in size using adhesive tape to dimensions of 12m in length and 6m in width. A competitive match time of 5 minutes is allocated for each game	Teaching the performance of the two skills in the presence of a competitor
P10	Two parallel lines are set up where students hold the ball in their hands, rise from a stationary position, throw the ball upwards, and hit the ball into the opposite court.	Feeling the ball at the moment of hitting it
P11	The student performs the technical stages of the serving skill completely, directing the ball to a teammate standing 12m away on the opposite side of the court, and this continues for the other students.	Teaching and controlling the technical stages of performing the serve skill
P12	Learners stand as one group behind the service line, and group members jump over the circles, balancing on one foot in each of the four circles, then performing the diagonal serve skill	Controlling the technical stages of performing the serve skill diagonally
P13	The learners are divided into two groups and stand behind the service line on each side. Upon hearing the first whistle, the learner begins to accelerate (raising the knee), and upon hearing the second whistle, they jump forward, then serve and direct the ball towards the marked square on the opposite court	Teaching the learner balance with accurate serve performance
P14	Each group plays for 5 minutes in a 3-on-3 format, and the exercise requires achieving a 3-point difference for either group	Increasing difficulty by expanding tasks across the full court
P15	Each group plays for 5 minutes in a 6-on-6 format, and the exercise requires achieving a 3-point difference for either group.	Natural play

Note: For each educational unit, 5 exercises are applied for 4 minutes each exercise.

Appendix (2)

Some educational images according to the Whitley strategy

الإرسال المواجه الأمامي من الأسفل.
تتم هذه المهارة بثلاث مراحل هي :



المرحلة التمهيدية (التحضيرية):

1. يقف اللاعب خلف خط النهاية في منطقة الإرسال مواجهاً للشبكة في وضع المشي والقدم اليسرى أماماً للاعب الأيمن وبالعكس.
2. تثنى الجسم مرتكزاً على الساق الأمامية والجزء مائل قليلاً للأمام.
3. الكرة تستقر على اليد اليسرى للاعب الأيمن وفي ارتفاع الـ 10 سم ويواجه اليد الضاربة قليلاً والتي تكون ممدودة بمرونة للأمام مقابل الجهة اليمنى من الجسم وبالعكس للاعب الأيسر.
4. التأكد من أن جميع العضلات المشاركة بالتوضع غير متصلبة أو مشدودة.
5. يوجه نظر اللاعب إلى الشبكة لحظة التقاط.

تنشيط Windows
انتقل إلى الإعدادات لتنشيط Windows



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A study to analyze the performance level of the high spike and serve skills of professional players in the Iraqi Volleyball Premier League for the 2022-2023 season

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Abstract:

The importance of research in analyzing the level of offensive skill performance for the high smash and serve skills according to a computer-based analysis program on professional players in the Iraqi Premier League in volleyball. Through the researcher's follow-up of the matches of the Iraqi Premier League in volleyball, they found that the clubs that contracted with professional players there is a disparity in the level The skill performance of these professionals, especially the level of performance of some offensive skills. The objectives of the research were to analyze the level of skill performance of professional players for the serving skill and to analyze the level of skill performance of professional players for the spike hit skill according to the location of the spike hit on the court (1, 2, 4). The researcher used the (data) program. volley) to analyze the effectiveness of the offensive skill performance of professional players, which extracts an analysis of the level of skill performance for the serving and spiking skills. The conclusions of the research were There is a weakness in the level of performance of the serve skill of both types of ace and flutter among professional club players, and the level of performance of the ace skill from position (2) is better than the level of performance of the skill of ace from position (4). There is a discrepancy in the performance level of the skill of ace from position (1).) between one match and another based on the level of performance of the competing team. The recommendations were training on accuracy, concentration and speed in hitting the ball on the ace and flutter to increase effectiveness and introduce fun and suspense into training types of serves as well as increasing motivation.

Keywords: performance level, smash hit, serve, professional players

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Introduction

The great development that has occurred in sports, including volleyball, has made developed countries resort to developing modern skill methods in confronting the opposing team, out of their conviction that these skill methods represent the most important aspect of the game, in addition to the high physical fitness required by the game, which must be given great attention. Large and high, this makes it easier for the player or team to know the offensive or defensive tactical aspects of the opposing team. This skill development came through the use of modern scientific methods in measuring and analyzing the technique that players perform during matches, as analysis during matches gives more credibility than it does in training, so Modern equipment was used for photography, as well as the computer, which has become of great importance in the process of analyzing the skills of players. (Nashwan, 2024)

The skill level of professional players in the game of volleyball gives an indication of the extent of the team's individual and collective skill progress. The method of analyzing matches using a computer is one of the latest methods that coach's resort to know the level of performance of their players and teams, address weaknesses and enhance strengths, which makes it easier for the coach to develop a plan and method of playing. (Yasir et al., 2020) Suitable for every match, and as a result of the lag in the level of volleyball in Iraq, we need to conduct an analysis of the technical skills of professional players in order to know the weak points of the players and the team to raise the technical level and be on the right path in preparation, (Zahraa & Ali, 2022) since serving and spiking are among the important and basic skills in winning the match from Here came the importance of research in analyzing the effectiveness of offensive skill performance according to a computer-based analysis program on professional players in the Iraqi Premier Volleyball League.(Abed et al., 2022)

Research problem:

The game of volleyball consists of many technical skills that are performed differently, but they must be interconnected and integrated in order to reach the high level, and reaching the higher and advanced levels requires a lot of research and analysis in order to determine the technical level of the players and evaluate the effectiveness of the performance of the players and the team, and this requires Creating a scientific and advanced program that analyzes the team during matches and records all the team's strengths and weaknesses in order to raise the level of the team. Through the researcher's follow-up of the Iraqi Premier League volleyball matches, she found that the clubs that brought in professional players there is a disparity in the level of these players, especially the level of performance of some offensive skills, and this The disparity had a negative impact on the team's results, which led to a change in the sequence or final ranking of the Iraqi teams. It is very important to know the level of these players and their role in their teams, and whether their skill level is proportional to the amounts spent on them, and from here came the problem of the research in identifying the level of effectiveness. The performance of these foreign players

research aims:

- 1- Analysis of the level of skill performance of professional players for the skill of serving with both types of flutter and ace
- 2- Analysis of the level of skill performance of professional players for the smashing skill according to the hitting position on the field (1,2,4)

Research areas:

- Human field: Professional players in the Iraqi Premier League for the 2022-2023 sports season
- Time range: The period of time limited to (10/1/2022 until 4/10/2023).
- Spatial domain: Halls for Iraqi Premier League volleyball matches (Al-Shaab Hall, Al-Zubair Hall in Basra, Peshmerga Hall in Sulaymaniyah, Erbil Hall in Erbil)

Among the studies that dealt with the subject of analysis is a study by (Tariq Ali Yousef, Jaafar Abdul Muttalib) (The effect of exercises similar to match situations according to the statistics of the analytical program Click Scout)) on some types of skill performance of some players of the Iraqi Elite Volleyball League 2018-2019)

The method of analyzing matches is an integrated system for evaluating and measuring the entire team or each individual player during matches or training, as coaches resort to it to determine the performance of players and the team and evaluate them continuously in matches. This procedure allows them to identify all the events of the matches or the entire tournament and implement various skills according to statistics. The extracted program as well as extracting the results for the team and calculating the error percentage for each player as well as knowing the rotation errors and calculating points and conducting the analysis by replaying the movement slowly and conducting the analysis for each type of skill, as the importance of research lies in the effect of exercises similar to match situations according to the statistics of the analytical program. (click scout) In some types of skill performance of some players in the Iraqi Elite Volleyball League 2018-2019, and through the researchers' observation, it was found that Iraqi clubs lack objective analysis and direct evaluation using computer analysis programs that evaluate each player individually or the entire team through matches. Which leads to identifying the defect in the level of the team, and through the experience of the researchers, as they are former players and the fact that one of them works in the field of training for long periods, and by taking the opinions of experts and specialists in the game, he noticed that there is a lack of use of statistical analysis programs using computers, whether in particular by the Central Iraqi Federation or In general by the clubs, the researchers also noticed the lack of use of exercises similar to match situations, so they decided to delve into preparing exercises similar to match situations according to the statistics of the analytical program (click scout) in some types of skill performance of some players of the Iraqi Elite Volleyball League 2018-2019. The aim of the research is to prepare exercises similar to match situations according to the statistics of the analytical program (click & scout) in some types of skill performance of some players of the Iraqi Elite League in volleyball. Identifying the effect of exercises similar to match situations according to the statistics of the analytical program (click & scout)) on some types of skill performance of some Iraqi Elite League volleyball players. To achieve the research objectives, the researchers used the experimental approach with a single experimental group design, and the research population was identified, represented by the players of the Premier League volleyball clubs for the 2018/2019 sports season, who numbered (8 clubs), with (112 players) representing the southern and northern groups for the preliminary qualifiers for the Premier League. As for the sample The research consisted of the Al-Sinaa Club players, who numbered (14 players), with the percentage of the sample from the population reaching (11.4%). After that, the researchers used the analytical program (click & scout) to extract the pre-analysis, then design exercises, and then conduct the post-analysis. After that, the researchers processed The results are in the winning section to obtain the results of the search. The researchers reached some conclusions, the most important of which is: The experimental group excelled in the post-analysis of some types of skill performance of some Elite League players. The analytical program Click Scout was effective in analyzing some types of skill performance of some Elite League players.

Research methodology and field procedures: Programmer and Procedure

Research Methodology:

The researcher used the descriptive approach for its suitability in achieving the research objectives.

Research community and sample:

The researcher identified the research community represented by the professional players present in the Iraqi volleyball league for the Riyadh season 2022-2023, and their number is 16 players distributed among eight clubs. As for the research sample, they are the professional players of the clubs that qualified for the golden square, their number is (12) players, and they represent the clubs (Police, South Gas, and Peshmerga). , Erbil) and they represent the research sample by 66%

Tools and devices used in research:

1. Arab and foreign sources.
2. The analytical program (data volley) from the company (www.datavolley.com)
3. Dell electronic calculator
4. Sony 8M camera
5. Imation type CD

- Search procedures.

- Exploratory experiment.

The researcher conducted a reconnaissance experiment on 11/1/2022 among the professional's present with the Bahri Club, who were outside the main research sample, and it aimed to do the following:

Diagnosing the obstacles and negatives that the researcher encounters when conducting and implementing the main experiment.

- 1) The researcher's ability to use the analysis method within the electronic calculator.
- 2) The validity of the form for extracting results.
- 3) The accuracy of the researcher and his ability to quickly record and enter information.
- 4) Ensure the appropriate filming location for the purpose of recording player numbers and skill by the players

Statistical methods:

The researcher used the statistical package (SPSS) within the Windows 2000 system to process the data obtained.

- 1- percentage
- 2- Simple correlation coefficient (Pearson).
- 3- Skill performance level score: extracted directly from the analytical program using the computer.

The evaluation level score for each skill separately = the sum of the occurrences of the skill below the first degree level for the skill evaluation $\times 1$ + the total number of repetitions for the skill below the second level of the assessment $\times 2$ + + to the last total number of repetitions for the skill degree level.

Evaluation level score

Effectiveness ratio= $\frac{\square}{100}$

Total number of skills $\square$ Highest rating score

Presentation, analysis and discussion of results:

Display, analyze and discuss the results of the level of effectiveness of the jumping ace according to the skill levels of the professional players of the four clubs

Table (1) shows the level of effectiveness of the jump ace according to the skill levels of the professional players of the four clubs

	Jump ace skill levels						
	Skill effectiveness rate						
Jumping ace	Levels	Zero	1	2	3	4	Evaluation level
	Southern gas	5	10	12	2	1	36.6%
	Erbil	4	8	7	1	2	45.8%
	Peshmerga	7	13	6	4	2	35.17%
	the police	6	4	1	2	1	28.6%

The researcher found, through Table (1), that small or low effectiveness rates appeared in the matches (Southern Gas, Erbil, Police, Peshmerga) for jump aces and the professional players who performed this type of serve, as this serve did not have a good effect or morale on the players. Receivers from the other four teams. The researcher attributes the reason for this weakness to the lack of accuracy and correct focus in performing this serve, as the exercises must focus on using the serve in a focused manner. With a high hitting speed and hitting the ball straight and strong and directed at a specific player or between two players or at empty points or at a player with weak reception, (Nashwan & Alzoubi, 2022) the researcher advises when training this type of serve, which is considered a closed skill that depends on the player's technician only for training. Constantly and trying to isolate the player from external influences when performing the serve, as well as following the gradual method and repeating the exercise according to the different playing situations, as the libero player must stay away if he is good when performing the jump serve, as Nahida Abdel Zaid states, "The goal of the serve is to try score a point The researcher agrees with this opinion that the serving skill is an effective offensive skill from the linear, technical and psychological aspects, especially after the advanced teams used the jump serve in most of the match times. (Mondher et al., 2023)

Presenting, analyzing and discussing the results of the level of effectiveness of the jump serve according to the skill levels of the professional players of the four clubs

Table (2) shows the effectiveness percentage of the jump flutter transmission

	Skill levels of serving, fluter, and jumping						
Flutter jump transmitter		Zero	1	2	3	4	Effectiveness ratio
	Southern gas	11	29	20	12	8	44.6%
	Erbil	5	8	7	1	6	63.7%
	Peshmerga	9	21	5	2	4	32.3%
	the police	7	11	6	-	2	27.8%

The researcher found, through Table (2), that small or low effectiveness rates appeared in relation to the skill performance of the jump serve in the matches of the four clubs (Southern Gas, Erbil, Police, and Peshmerga), where the number of players using this type of serve reached (8) players and The researcher attributes the reason for this weakness to the prevailing thinking among professional players when the points between the two teams are close or reaching the last points of the half, that this skill is merely crossing the ball over the net, and where the player must take into account when performing the serve, the fluter from the jump, the distance. And the height and the specific place, as well as trying to play the ball against a player who is weak in receiving skill or a player in position (4). (Mondher & Khalaf, 2023) As for the match between Gas Al-Janoub and Erbil, the effectiveness was good, reaching (63.7), which is considered a good percentage if compared to the effectiveness of the serving skill. With other matches, the researcher attributes the reason for the appearance of this good percentage to the weakness of the receiving skill of the South Gas team, (Munaf et al., 2021) in addition to the high level of effectiveness of the serving skill of the Erbil Club players. The researchers advise when training the serving skill to include the fun and suspense factor in performing the serving exercises, as well as increasing motivation. In training, and also that the average age of the national team players is appropriate for the speed of learning and training in these skills, and also giving seriousness to the serve exercises, where the focus is on performing the exercises seriously. “The interest in increasing the diversity of the exercises according to different types of feedback, commitment, and diversification in performance helps. To develop and master the skill of striking. Also, the technical performance specifications for the back and front smash skill are similar in terms of increased flexion in the joints of the body, especially the knee joint.(HalahAtiyah et al., 2024)

Presentation, analysis and discussion of the results of the level of effectiveness of the high smash hit (position 2) according to the skill levels of the professional players of the four clubs

Table (3) shows the effectiveness rate for the high crushing hit center (2)

High smashing skill levels							
High crushing effectiveness center 2							
Overwhelming beating		Zero	1	2	3	4	Effectiveness ratio
	Southern gas	4	2	5	4	13	67%
	Erbil	3	2	7	2	12	67.3%
	Peshmerga	6	3	1	1	12	60.8%
	the police	1	2	1	-	6	70%

The researcher showed, through Table (3), the emergence of good moral percentages for the spiking skill from position (2). The researcher attributes the reason for the appearance of these good percentages to the fact that the player from position (2) always performs the spiking skill, in front of him is a blocking wall consisting of one player. (Easa et al., 2022) Only or rarely, there are two players in front of him. The reason for this is the difficulty of movement by the opposing team's focal player who is in position (3). Then he moves to position (4), where when the reception is good and the preparer has the ability to prepare for the focal players and for high smash players, the focal player's movement to position (4) is slow or difficult. Therefore, when a player in position (2) is characterized by the speed of hitting and the ability to change the direction of the smash hit, he will have a more effective rate of scoring points than other players in other positions. Therefore, it is required the players in this position must be characterized by length and high explosive power in order to be fast, and this comes through the period of practice that increases the improvement and development of skill accuracy for all basic skills in volleyball. (Salih et al., 2024)

Presentation, analysis and discussion of the results of the level of effectiveness of the high smash hit (4) according to the skill levels of the professional players of the four clubs

Table (4) shows the effectiveness rate for the high crushing hit center (4)

High smashing skill levels							
High crushing effectiveness position 4							
Overwhelm ing beating		Zero	1	2	3	4	Effectiveness ratio
	Southern gas	7	1	2	3	18	69.3%

	Erbil	5	1	1	3	13	69.5%
	Peshmerga	15	2	-	1	8	35.5%
	the police	4	1	1	2	9	46%

The researcher found, through Table (4), the emergence of good moral percentages regarding the level of performance of the spiking skill from position (4) in the (South Gas, Erbil) clubs, where the players of South Gas have players in position (4) who are professionals with physical, skill and tactical capabilities and are distinguished by their strength in Execution, speed in approaching, agility in jumping, and accuracy in direction. In addition, the players of position (4) have good experience in terms of exiting posts. (Abdulhussein et al., 2024)

As for the matches of the (Peshmerga and Police) clubs, the results showed that there were low or weak effectiveness rates in the skill of crushing strikes from position (4). The researcher attributes the reason for this to the discrepancy in the skill and tactical level, due to the lack of focus of the players of the (Police and Peshmerga) clubs and the lack of... Good behavior during the match, handling the ball, and also behavior when the preparation level is far from the net and when it is close as well, dealing with the high and low blocking wall, dealing with empty points in the opposing team's field, and how to behave and position the opposing team's back line players. Where the players for the clubs (Peshmerga, Police) were distinguished by defense, good coverage, and correct positioning. (Kadhim, 2024a)

Presentation, analysis and discussion of the results of the level of effectiveness of the high crushing hit, center (1), according to skill levels

Table (5) shows the effectiveness rate of hitting high position (1) for professional club players
The four

	High smashing skill levels						
	High crushing effectiveness position 1						
		Zero	1	2	3	4	Effectiveness ratio
Overwhelming beating	Southern gas	1	2	-	3	12	81%
	Erbil	2	1	3	4	11	75%
	Peshmerga	4	1	-	2	6	59.6%
	the police	8	2	4	-	6	42.5%

The researcher showed, through Table (5), the emergence of good effectiveness rates for the performance of the spiking skill from position (1) in the clubs (Gaz Al-Janoub, Erbil). The researcher attributes the reason for the appearance of these good percentages to the presence of a player in position (1) with high skill and physical qualities. The player in position (1) must understand the importance of the spike hit in scoring points more than the rest of the skills, as this player is called the “opposite” player (that is, the player who is the opposite of the number on the turn sheet and that the majority of the balls prepared for attack are for him and he is a player). It does not carry out the process of receiving the serve, meaning it has the greatest weight in the process of scoring points if it is implemented correctly. (Kazim et al., 2019) As for the clubs (Peshmerga, Police), little or low performance effectiveness appeared due to the presence of a very good blocking wall for the Libyan team, as well as the discrepancy in the skill and tactical level between our team. The Tunisian team did not show good effectiveness from the back line player from position (1) during those two matches. Also, the police team was distinguished by good defense and a good libero who was able to defend all the attacking strikes of the player from position (1). The skill of crushing strikes requires high speed in performance and Accuracy in implementation due to the large number of variables at the same time It is one of the skills that increases the excitement, suspense, and enthusiasm of the players and the audience, as well as it gives the players a competitive character. (Kadhim, 2024b)

Conclusions and recommendations

Conclusions:

- 1- There is a weakness in the serving skill of the ace and flutter types among professional club players
- 2- The performance level of the high spike hit skill from position (2) is better than the high spike hit skill from position (4)
- 3- Variation in performance level percentages for high spikers from position (1) between one match and another based on the effectiveness of the opposing team.**Q**

Recommendations:

- 1- Training on accuracy, focus, and speed in hitting the ball on the ace and flutter to increase effectiveness
- 2- Introducing fun and excitement into training different types of serve, as well as increasing motivation
- 3- Increase the number of friendly matches with high-level teams in order to develop the skill level of the players

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Obstacles to achieving quality field application performance from the point of view of fourth-stage female students at the College of Physical Education and Sports Sciences, University of Baghdad

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Abstract

The aim of the research was to prepare a scale of obstacles to achieving quality performance, field application from the point of view of fourth-stage female students, to identify the difficulties and obstacles to achieving quality performance through field application from the students' point of view for the topic (school administrative procedures, learners, cognitive achievement, school tools). The researchers used the descriptive approach in the research procedures as it is an appropriate approach to achieve the research objectives. The following questions were asked: There are obstacles and difficulties faced by female students during the process of choosing schools, dealing with school administrations, and the difficulties faced by female students during field application. Therefore, the importance of this study came in knowing the obstacles facing female students. The scale of obstacles to achieving quality performance consisted of 24 paragraphs, as it included four axes, each axis had 6 paragraphs. The first axis was school procedures, the second axis was learners, the third axis was students' cognitive achievement, and the

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fourth axis was school tools. The number of fourth-stage female students reached 128 female students who graduated for the academic year 2022-2023. A proportional random research sample was chosen at a rate of 78.12% From 100 students. The researchers concluded that the scale of obstacles to achieving quality performance field application from the point of view of fourth-stage female students in the College of Physical Education and Sports Sciences, University of Baghdad, the quality of field application depends entirely on school variables (school tools and procedures and knowledge of students and learners) and the researchers recommend that there be a scientific study regarding the quality of schools before field application, developing educational methods and approaches in colleges for implementers, having the sports lesson at the beginning of the school schedule, holding workshops with school principals to develop the field application process.

Keywords: Field application, quality performance, Fourth stage students

introduction

The educational process is achieved through comprehensive quality that is centered on the learner. Through this scientific quality, educational foundations, methods, strategies, and patterns flow to the learners. It helps in achieving integrated quality in performance for learners in the educational process in educational and academic fields. All educational institutions, whether (educational or university) in various Arab and foreign countries, seek to achieve comprehensive quality with a distinguished and different scientific status among institutions of an educational and pedagogical nature. In the world, through what these educational institutions provide of tasks and functions with the highest levels of high and actual efficiency, if this depends on several basic pillars, the most important of which is (faculty members) in achieving the goals required of them. (Hamdan et al., 2024)

The educational curricula for the subject (Teaching Methods) at the College of Physical Education and Sports Sciences / University of Baghdad revolve around two axes: the scientific aspect and the theoretical aspect. It takes an average of two years in the (third, fourth) stage. The study in the third stage is (4 hours) divided into (two practical hours and two theoretical hours). As for the study in the fourth stage, it is (4) educational hours. All of these matters help to achieve comprehensive quality in the field application of female students. (Kadhim, 2024)

The field application is the final stage that the learner undertakes during the study period of 4 educational years and is considered the major challenge that learners face with a new educational environment with a character and tendencies that are not similar to the environment of the learners who practice it. He stated: male (Council for Exceptional Children, 2003) that Field training is of great importance in preparing Learners Employing the theoretical aspects and knowledge that these students receive in the classroom in practical reality and gaining them practical experience in professional practice and discovering the difficulties and obstacles facing practitioners of field application. The students' mastery of the skills of using the teaching methods given to them in the college curriculum helps them deal with the curriculum flexibly and achieve the goals and duties required of them. male (Leko, 2012) Field application is an educational activity, but it is done through practical practice in the field. You do not know without training that the student's field application in the field of education is considered an important opportunity that greatly affects his future success in professions. (Khudhair & Mohsin, 2022)

The problem lies in the study. The teaching methods teacher noted that there are obstacles and difficulties faced by female students during the process of choosing schools, dealing with school administrations, and the difficulties faced by female students during field application. Therefore, the importance of this study came in knowing the obstacles faced by female students. The study to scale setting obstacles to achieving quality performance: field application for female students. In addition to identifying the difficulties and obstacles to achieving quality performance through field application from the students' point of view on the topic (school administrative procedures, learners, cognitive achievement, school tools). (Khadir, 2023)

Importance of the study

The importance of the study comes from knowing the difficulties that students face during field application and the ways to address these obstacles and presenting a study regarding them, as field application must have a distinct and important role for learners and provide them with the correct field application environment for them.

Previous studies:

Study (Yasser Hussein, Abdullah Ghazi 2023) The role of the academic supervisor in the effectiveness of the field application performance of students of the Faculty of Physical Education and Sports Sciences in schools. The aim of the research was to prepare a scale for the role of the academic supervisor and the effectiveness of the field application for students, to identify the relationship between the role of the academic supervisor and the effectiveness of the field application for fourth-stage students / College of Physical Education and Sports Sciences / University of Baghdad / Al-Jadriya. The researchers used the descriptive approach in the research procedures as an appropriate approach in achieving the research objectives, and the following questions are: What will the field application (application) achieve for the students and what is the role of the academic supervisor in the field application process? The academic supervisor scale consisted of 15 paragraphs and the field application effectiveness scale for students consisted of 15 paragraphs. The research community included the teaching staff of the College of Physical Education and Sports Sciences, numbering (176) teachers, and the number of fourth-stage students 2022-2023 was (362) male and female students. The field application period for students was 6 months. A random, proportional research sample was selected at a rate of 42% of which 74 are teachers and 154 are students. The researchers concluded that the measures of the role of the academic supervisor and the effectiveness of the students' field application are strongly related to each other. The researchers concluded that the educational effectiveness in the students' academic stages was met with a qualified field (applied) performance to be part of the educational cadre on the basis of which it was developed, activated, evaluated, and effective in the educational process. It is the academic supervisor.

Study (Mohsen Mohamed, Amr Mustafa 2016) Difficulties in achieving quality performance in field application from the point of view of student teachers specializing in teaching at the Faculty of Physical Education for Boys, Alexandria University, revealing difficulties related to schools, difficulties related to components, difficulties related to

learners, difficulties related to professional preparation, descriptive approach, research community 154 students, while the research sample was 104 students.

The study (Imad Abdel Latif 2006) aimed to reveal the obstacles that prevent the achievement of quality in the application of field training courses in the field of social service. The descriptive approach was used, using a questionnaire to collect data, the research community was 154, and the research sample was 104.

.proceduresTools:-I dependResearchersThe descriptive approach in research procedures as an appropriate approach to achieving the objectivesResearch includedResearch communityStudentsThe fourth stage in the College of Physical Education and Sports Sciences / University of Baghdad / for the academic year 2022-2023 (128) A female graduate student, a proportional random sample was selected for the research.78.12% 100 female students, and the survey sample amounted to 28 female students, representing 21.87%..

Table 1: Shows the distribution of the research community, the research sample, and the sample for preparing and applying the scale.

Research community	theTotal number	sampleSearch	percentage	Survey sample	percentage
Students	128	100	78.12%	28	21.87%

use ResearchersThe following means (paragraph validity determination form)Scale of Obstacles to Achieving Quality Performance Field Application from the Perspective of Fourth-Grade Female Students Arabic and foreign sources, transcription formtheData, statistical methods of the study). Specify (Scale of Obstacles to Achieving Quality Performance Field Application from the Perspective of Fourth-Grade Female Students) By conducting a survey of previous studies, if the scale consists ofFour axes (School administrative procedures, learners, cognitive achievement, school supplies)The response alternatives included a five-point Likert scale (very much, great, medium, little, very little) for the scale.

The scale was displayed onThe teachersAnd specialists To know the validityhAnd suitabilityhFor the study, as shown in Table (2), which shows the extent of agreement of the experts on:Axes andParagraphs The scale.

Table (2) It shows the percentage of agreement of experts regarding the validity of Scale axes

Axes	It is suitable	percentage	It is not suitable	percentage
Procedure at School	11	100%	0	%0
Learners	11	100%	0	%0
Cognitive achievement (For learners)	11	100%	0	%0
School supplies	11	100%	0	%0

Table (3) shows the percentage of agreement between experts regarding the validity of the scale items.

The first axis(School administrative procedures)							
Paragraph s	It is suitabl e	percentag e	Not suitabl e	percentag e	Kai value calculat ed	Ka valu e table	Significanc e
1	11	100%	0	%0	11	3.84	moral
2	11	100%	0	%0	11		
3	11	100%	0	%0	11		
4	11	100%	0	%0	11		
5	11	100%	0	%0	11		
The second axis (Educated)							
1	11	100%	0	%0	11	3.84	moral
2	11	100%	0	%0	11		
3	11	100%	0	%0	11		
4	11	100%	0	%0	11		
5	11	100%	0	%0	11		
6	10	80.80%	1	8.1%	7.36		
The axis the third(Cognitive achievement)							
1	11	100%	0	%0	11	3.84	moral
2	11	100%	0	%0	11		
3	11	100%	0	%0	11		

4	11	100%	0	%0	11		
5	11	80.80%	0	8.1%	11		
6	10	90.90%	1	9.1 %	7.36		
The axisFourth(School supplies)							
1	11	100%	0	%0	11	3.84	moral
2	11	100%	0	%0	11		
3	11	100%	0	%0	11		
4	11	90.90%	1	9.1 %	11		
5	11	100%	0	%0	11		
6	10	100%	0	%0	7.36		

Scientific foundations for the performance evaluation scale for graduates working in the sports field:

How to correct paragraph alternatives Scale

After verifying the validity of the alternatives And its approval according to The five-point Likert scale method, which was represented by (very large, large, medium, small, very small), and since the scale is an ordinal scale, the scale was corrected by placing an appropriate degree for each paragraph according to the respondent's answer through the correction key, which is the tool by which the examiner reveals the answers that indicate the existence of the result being measured, the table(4) It shows that. Thus, the limits of the scale degrees were (The highest score that can be obtained is 120 The lowest score that can be obtained is 24) Table (5) shows the degrees of the four axes. While the hypothetical medium The scale reached (72).

table4 Weights of answer alternatives

Answer alternatives	Too big	Big	Medium	Few	Very little
the weight	5	4	3	2	1

Table (5) Degree limits For the four axes of the scale

The attribute	Highest axis degree	Minimum axis degree	Hypothetical mean of the axes
School procedures.	30	6	18
Learners.	30	6	18
Cognitive achievement (for learners).	30	6	18
School supplies.	30	6	18
Total scale	120	24	72

First: Content validity (the validity of experts and specialists): -

This kind of honesty has been confirmed through Rise Researchers By design Questionnaire Distributed For professionals In this field And it was taken Researchers With suggestions Provided by experts Some modifications were made to some paragraphs of the axes, revealing the validity of the scale and the alternatives to the scale, in addition to the paragraphs related to (To measure the obstacles to achieving quality performance in field training from the point of view of fourth-stage female students) and Private for all axis By the value of Ka2 To nominate it for use.

Second: Tool stability I depend Researchers Within the procedures Scientific By setting the scale (To measure the obstacles to achieving quality performance in field training from the point of view of fourth-stage female students) With Special statistical methods will be used, by calculating the stability coefficient. alpha Cronbach's, where the overall reliability coefficient was For the four axis (0.82) It is considered a high value and qualifies for the purpose of study, as shown in the table below.

Table 6 Cronbach's alpha coefficient value For scale axes And the total score.

The axis	Cronbach's alpha	Number of	Sample
The first axis (School procedures)	0.81	6	100
The second axis (Learners)	0.81	6	
The third axis (cognitive achievement of learners)	0.82	6	
Axis Four (School Tools)	0.85	6	
Total score for the stability	0.82	24	

Internal consistency of the scale:-Researchers have done by extracting the internal consistency coefficient by relying on the value of the correlation coefficient (Pearson) between the score of each paragraph and the total score for each axis. The total scale score is combined with the total score for each axis.

Table 7 It shows the correlation coefficient between the statement score and the total score for the two axes (practical, theoretical) of the performance evaluation scale for graduates working in the sports field.

Internal consistency of the first axis (School procedures)				Internal consistency of the second axis (Educated)			
T	Paragraph link to axis	value sig	Significance	T	Paragraph link to axis	value sig	Significance
1	**0.386	0.000	Morale	1	0.238*	0.003	Morale
2	**0.475	0.000	Morale	2	0.361**	0.000	Morale
3	.625**0	.0.000	Morale	3	0.602**	0.000	Morale
4	0.324**	0.000	Morale	4	0.377**	0.000	Morale
5	0.349**	0.000	Morale	5	0.359**	0.000	Morale
6	.494**0	0.000	Morale	6	0.516**	0.000	Morale
Internal consistency of the third axis (cognitive achievement of learners).				Internal consistency of the fourth axis (school tools).			
T	Paragraph link to axis	value sig	Significance	T	Paragraph link to axis	value sig	Significance
1	0.165	0.102	Morale	1	.485**0	0.000	Morale
2	.360**0	0.000	Morale	2	0.217*	0.030	Morale
3	.403**0	.0000	Morale	3	0.334**	0.001	Morale

4	.229**0	.0000	Morale	4	0.550**	0.000	Morale
5	.443**0	0.000	Morale	5	0.378**	0.000	Morale
6	.555**0	0.000	Morale	6	0.294**	0.003	Morale

Table (8) Correlation of the college scale score with the college score for each axis.

Significance	valuesig	Correlation of the scale score to the	T
Morale	0.100	0.641**	1
Morale	0.000	.650**0	2
Morale	.0000	.457**0	3
Morale	0.000	0.484**	4

- After completing internal consistencyFor all scale axesIt was found that all the scale items have a significance level of (0.00).0- 0.102)
- After completing the internal consistency of the total scale score and the score of each axis, it was found that all the scale axes have a significance level of (0.000).

Results

Table 9: Arithmetic means and standard deviation (for the first axis/school procedures) for the scale of obstacles to achieving quality performance in the field application from the point of view of female students in the fourth stage.

T	Paragraphs		too big	Big	Medium	Few	Very little	Arithmetic mean	Standard deviation	Repetition
1	The administration's lack of interest in the applications during the field application period.	Sample	15	50	27	5	3	3.690	0.895	1
		%	15 %	50 %	27%	5%	3%			
2	The lack of interest in the administration's assistance and cooperation	Sample	22	16	40	22	0	3,380	1.061	3
		%	22 %	16 %	40%	22 %	0%			

	with the applications.									
3	The administratio n's lack of interest in the mechanism and role of applications in the school.	Samp le	19	34	12	30	5	3.320	1.229	4
		%	19 %	34 %	12%	30 %	5%			
4	Assigning administrativ e duties by the school to employees in fields other than theirs.	Samp le	15	28	21	18	18	3,040	1.340	6
		%	15 %	28 %	21%	18 %	18 %			
5	Give the sports lesson in the schedule at the end of the day.	Samp le	22	36	22	17	3	3,570	1.103	2
		%	22 %	36 %	22%	17 %	3%			
6	Not providing motivation for the applicators during the field application period	Samp le	12	35	32	7	14	3.240	1.190	5
		%	12 %	35 %	32%	7%	14 %			
weighted mean		3.373								
Standard deviation		0.504								

Table 10: Arithmetic means and standard deviation (for the second axis/educators) for the scale of obstacles to achieving quality performance in field application from the point of view of female students in the fourth stage.

T	Paragraphs		too big	Big	Medium	Few	Very little	Arithmetic mean	Standard deviation	Repetition
1	Learners' perception that the sports lesson is not important	Sample	12	49	30	7	2	3.620	0.861	1
		%	12 %	49 %	30 %	7 %	2 %			
2	Repeated absences of learners without an excuse from the sports lesson.	Sample	18	22	39	20	0	3.383	1.007	3
		%	18 %	22 %	39 %	20 %	0 %			
3	Learners realize that the sports lesson is not included in the lesson schedule.	Sample	18	29	14	34	5	3,210	1.233	5
		%	18 %	29 %	14 %	34 %	5 %			
4	Not wearing the sports uniform for the subject.	Sample	17	27	23	17	16	3.120	1.327	6
		%	17 %	27 %	23 %	17 %	16 %			
5	Difficulty dealing with learners in the	Sample	22	32	22	19	5	3,470	1.175	2
		%	22 %	32 %	22 %	19 %	5 %			

6	Some learners belittle the importance of the sports lesson during the lesson.	Sampl	14	38	26	8	14	3,300	1.226	4
		%	14 %	38 %	26%	8%	14 %			
weighted mean			3.353							
Standard deviation			0.479							

Table 11: Arithmetic means and standard deviation (for the third axis/cognitive achievement (students)) for the scale of obstacles to achieving quality performance in the field application from the point of view of female students in the fourth stage.

T	Paragraphs		too big	Big	Medium	Few	Very little	Arithmetic mean	Standard deviation	Repetition
1	Lack of basic information about the sport.	Sample	16	42	19	15	7	3,440	1.148	3
		%	16 %	42 %	19%	15 %	7%			
2	Lack of physical fitness for many learners.	Sample	25	26	26	21	2	3.510	1.141	1
		%	25 %	26 %	26%	21 %	2%			
3	Lack of interest of learners in sports lessons in schools	Sample	16	25	32	20	7	3,230	1.153	6
		%	16 %	25 %	32%	20 %	7%			
4	Learners lack neuromuscular abilities in athletic performance	Sample	17	27	23	17	16	3,350	1.113	4
		%	17 %	27 %	23%	17 %	16 %			

5	Lack of interest by parents in students' sports activities.	Sample	22	32	22	19	5	3,440	1.131	2
		%	22 %	32 %	22%	19 %	5%			
6	Learners do not realize that physical education lessons are not useful in schools.	Sample	14	38	26	8	14	3.410	1.272	5
		%	14 %	38 %	26%	8%	14 %			
weighted mean			3.396							
Standard deviation			0.420							

Table 12: Arithmetic means and standard deviation (for the fourth axis/school tools) for the scale of obstacles to achieving quality performance in the field application from the point of view of female students in the fourth stage.

T	Paragraphs		too big	Big	Medium	Few	Very little	Arithmetic mean	Standard deviation	Repetition
1	Schools lack appropriate playgrounds to implement lesson requirements.	Sample	15	44	23	11	7	3,490	1.096	2
		%	15%	44%	23%	11%	7%			
2	Lack or scarcity of tools available at school.	Sample	13	25	38	19	5	3,220	1.0596	5
		%	13%	25%	38%	19%	5%			
3	The school lacks a room for the physical education teacher.	Sample	17	41	17	20	5	3,450	1.140	3
		%	17%	41%	17%	20%	5%			
4	Lack of maintenance of available	Sample	21	27	16	17	19	3.140	1.428	6

	playgrounds in schools.	%	21 %	27 %	16%	17 %	19 %			
5	The tools available at the school are not valid.	Sampl e	22	36	26	11	5	3.590	1.101	1
		%	22 %	36 %	26%	11 %	5%			
6	Schools lack a special changing room.	Sampl e	14	34	26	19	7	3.290	1.139	4
		%	14 %	34 %	26%	19 %	7%			
weighted mean		3.363								
Standard deviation		0.446								

From table 9 I got Paragraphs The first axis: School procedures, with a score of (agree) with an arithmetic mean of 3.37 and a standard deviation of 0.504 according to the Likert scale, the degree of difficulties and obstacles to achieving quality performance in field application from the point of view of female students for the fourth stage, where paragraph 4 (Assigning administrative duties by the school to employees in fields other than theirs.) With an arithmetic mean of 3.040 and an average score on the Likert scale, it was in last place. School administrations do not help the applied students to have the opportunity to develop school sports by assigning them other matters, such as making up for vacant classes, giving them administrative matters, or assigning them duties throughout the field application period. All of these matters lead to the failure to achieve comprehensive quality for the applied students by completing the basic meals given to them during the field application period. (HalahAtiyah et al., 2024) If there were high difficulty levels for the remaining paragraphs, the paragraphs obtained high arithmetic means and percentages, as shown in Table No. 9.

Table 10 paragraphs obtained The axis the second Learners On the degree of (Big) by the arithmetic mean 3.353 And a standard deviation of 0.479 According to the Likert scale, the degree of difficulties and obstacles to achieving quality performance in field application from the point of view of female students in the fourth stage, (Mousa & Kadhim, 2023) where paragraph 4 obtained (Not wearing the sports uniform for the subject) On average my calculation was 3.120 And to a degree (medium) According to the Liker scale, it was ranked last. Learners have a major role in completing the field application curriculum correctly. Learners' lack of awareness of the importance of the physical education lesson negatively affects the field application, as most learners do not have the correct idea about the sports lesson. If there were high difficulty levels for the remaining paragraphs, the paragraphs obtained high arithmetic means and percentages, as shown in Table No. 10. (Easa et al., 2022)

Table 11 paragraphs obtained The axis Furniture (Students' cognitive achievement) On the degree of (Big) by the arithmetic mean 3.396 And a standard deviation of 0.420 According to the Likert scale, the degree of difficulties and obstacles to achieving quality performance in field application from the point of view of female students in the fourth stage, where the paragraph obtained 3 (Lack

of interest in sports lessons in schools) On average my calculation was 3.230 And to a degree (medium) According to the Likert scale, (Munaf et al., 2021) it was ranked last. The lack of mathematical knowledge in schools among learners is considered a factor that has a negative impact on learners. Not understanding the simplest basics of mathematical knowledge makes the learner lack self-confidence, as it affects the quality of the students' field application performance and the failure to prepare a mathematical lesson correctly. If there were high difficulty levels for the remaining paragraphs, the paragraphs obtained high arithmetic means and percentages, as shown in Table No. 11. (Jamil & Saeed, 2021)

Table 12 paragraphs obtained The axis Fourth (school supplies) On the degree of (Big) by the arithmetic mean 3.363 And a standard deviation of 0.446 According to the Likert scale, the degree of difficulties and obstacles to achieving quality performance in field application from the point of view of female students in the fourth stage, where the paragraph obtained 4 (Lack of maintenance of available playgrounds in schools) (Manaf, 2015) On average my calculation was 3.140 And to a degree (OK) According to the Likert scale, it was ranked last. The failure of schools to provide full importance to the school's infrastructure and their lack of a correct vision towards the school and the school administration's reliance on developing the educational aspect of the rest of the subjects and isolating the most important aspect in the school, which is providing the necessary tools for the sports lesson, such as playgrounds and their maintenance and providing the necessary tools for the success of the sports lesson. All of these matters have a negative impact on the quality of field application performance because the basis of application in schools depends on the infrastructure and what the school provides of things that contribute to the development of this educational process. If there were high difficulty levels for the remaining paragraphs, the paragraphs obtained high arithmetic means and percentages, as shown in Table No. 12. (Kadhim et al., 2021)

Conclusions

- The researchers concluded that the quality of field application depends entirely on school variables (school tools and procedures and knowledge of students and learners).
- Researchers recommend that there be a scientific study on the quality of schools before field application, developing educational methods and approaches in colleges for implementers, having the sports lesson at the beginning of the school schedule, and holding workshops with school principals to develop the field application process.



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Total Quality Management Applications in the Process of Qualifying and Training Physical Education Teachers

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Abstract

The importance of the research here comes as an initial initiative that may represent in its results a basis for comparison between everything new and modern in the world of training and qualification and traditional methods in training operations, through knowing what is the possibility of applying the principles of total quality management in training and through the opinions and viewpoints of those in charge of the training process ,from administrators and trainers in the education directorates in different regions of Iraq .as they are the closest to the existing reality

It is also worth noting that most researchers who have addressed the topic of total quality management and its applications have greatly enriched their research with the concept of total quality, but their studies and research that they conducted did not ,address the relationship of the training process to the concept of total quality management especially with regard to training various teaching cadres and the specialization of physical education in particular. Accordingly, the researcher did not find (according to his knowledge) any studies that addressed this topic, which represents great importance in the success of the work of the educational institution. The problem of the research lies in the clear delay in the level of the process of qualifying and training physical education teachers through the qualifying courses held by the Educational Preparation and Training Department in the Ministry of Education and the importance of applying the comprehensive quality strategy and trying to employ it in the aforementioned training and qualification processes. The research aims to identify the degree of importance of applying the comprehensive quality management strategy in the process of training and qualifying physical education teachers . The research is limited to the directors and

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,directorates of preparation and training and the governorates of central and southern Iraq as well as a section of specialized professors and specialized supervisors who represent the training cadres accredited by these directorates and the governorates themselves and for the academic year (2023/2024). The research community consists of (9) directors of preparation and training in the Ministry of Education in the governorates of central and southern Iraq and (14) professors and specialists in the field of physical education and training programs, so that the research community became composed of (23) of the aforementioned categories . After that , the researcher designed the scale in a manner that is compatible with the research sample and used the scientific foundations and appropriate statistical methods that produced the scale in its final form with (27) paragraphs. The scale was applied to the research sample and the most important results of the study were: By coming up with a number of results, the most important of which was the application of modern training and educational techniques in teaching physical education, as well as the great support in various fields for trainees and trainers. The researcher also came up with a set of recommendations and proposals, the most important of which was the necessity of selecting competent and unique elements who have the ability and knowledge in modern teaching techniques according to the perspective of comprehensive quality as leaders. An administrative body based on the training process, as well as establishing and activating departments for comprehensive quality management in all training centers for training teachers and for various specializations within the Ministry of Education.

Keywords: Total Quality Management, Training

Introduction

The success and distinction of any organization is through the development and success of its working cadres by training and qualifying them in a necessary manner. This process is essential in development, and since total quality management is one of the modern and contemporary strategies that has been applied in most production and educational organizations and has achieved positive results at various levels, one of the previous studies that addressed the research topic is the study of (Abdul Rahman) Hijan" presented a study entitled "A Scientific Approach" to Applying Quality Management Concepts". His study aimed to present the concept of Total Quality Management as one of the concepts that aim to improve the performance of organizations by paying attention to quality elements. In his study, he relied on the office method in collecting data in addition to using the method of comparison and descriptive ,analysis to achieve the study objectives. The researcher came up with recommendations :including

Providing conviction to senior management regarding the importance of .1
comprehensive quality in any institution seeking to adopt it in its technical and administrative
. work

Providing material and moral incentives to encourage individuals implementing.2
.quality improvement programs

Training managers and members of the administrative or educational institution to
.apply the concepts of total quality management

There is also a study that addressed the research topic. The (Al-Hiti, Salah al-Din and Al-Maasher Ziad, 2017) study addressed the analysis of the relationship between the total quality management system and human resources fields and its impact on performance. The study was applied to (14) organizations that adopt the total quality system in their work in Jordan. The study presented, within its theoretical framework, a presentation of the concept .of human resources management as a major part of the principles of total quality management The study concluded that there are correlational relationships between the elements of total ,quality management and human resources fields (selection, training, compensation evaluation). The researcher concluded that it is necessary to achieve high levels in the process of integrating individuals into total quality programs by opening channels of participation for everyone and not focusing on specific individuals, in addition to studying (Barwari, 2018) This study refers to the problem of the knowledge and scientific gap in adopting the possibility of applying the philosophy of total quality management. The study aimed to present proposals for a future vision in the possibility of applying the total quality management system in the Iraqi environment. The study included three main axes. The first presented the concept of quality and its historical development, while the second dealt with the philosophy of total quality management as a general framework. The latter included important proposals for the future vision, the most important of which is the need to reconsider the incentive system according to the requirements, circumstances and systems of each institution. The importance of the research is highlighted through the application of the management of total quality strategy (Abdulhussein & Adnan, 2024) Since training and continuous improvement are one . of the basic criteria for the total quality management system and its applications and are considered one of the most important pillars of this diversity of technology, it was necessary to give great importance to the possibility of harnessing the criteria of this strategy in the training process. The (Easa et al., 2022) study aimed to identify the extent of the application of comprehensive quality standards in educational training from the point of view of training supervisors. The study sample consisted of (60) individuals who were subjected to a questionnaire on the extent .of the application of comprehensive quality standards in educational training (Kadhim, 2023a) The study reached the most important results, which are that comprehensive quality standards can be applied to a high degree in educational training. The reality of applying comprehensive quality principles in educational training indicates that comprehensive quality principles in general are applied and practiced weakly in educational training, and that educational training supervisors face moderate problems when applying comprehensive

quality principles in educational training. Finally, the study(Kadhim, 2023b) aimed to identify the possibility of applying quality in general education and determining the foundations of comprehensive quality, its goals, requirements, and benefits, and supporting the Saudi education system with the development of the educational aspect. The descriptive approach was used in this study, and one of its most important results was updating educational work .and applying comprehensive quality in all elements of the educational process

Method and tools

The research community was determined intentionally, as the research community consists of (9) directors of preparation and training in the Ministry of Education in the governorates of central and southern Iraq and (14) professors and specialists in the field of physical education and training programs, so that the research community became composed ,of (23) of the aforementioned categories . Since the research community is relatively small the sample must be representative of the largest possible part of the research community. The research sample consisted of (20 individuals), and thus the sample represents the community at a rate of (88%), and thus it is acceptable and sufficient for the size of the research ,community(Abdulkareem et al., 2024).as it consists of dozens of ndividuals (Brog, 2016) The researcher used the questionnaire as a tool to collect data on the degree of importance of employing comprehensive quality standards in the programs and training . courses held in the preparation and training directorates and for the various specializations that to set an idea Measurement from first Steps Because it is Help intended Scale translation Ideas Home that He depends On it in practical(HalahAtiyah et al., 2024) Construction after that He did researcher Specifically an idea Scale It was completed to set the goal from Scale The purpose Required from behind Build it And he is Find A means Scientific To get to know . on The degree of importance of implementing the total quality management strategy

The tool was built by the researcher by following the following

Directing an open question to a number of male and female directors in the preparation and training directorates and a section of those concerned with training teaching staff in the field of physical education and those concerned with various training fields about the paragraphs that they believe are related to the training process according to the concept of .comprehensive quality

Reviewing a set of studies and research related to the topic of training and the .foundations of preparing training programs

Reviewing studies and sources that have researched the topic of total quality .management, its requirements and elements

Through the researcher's modest experience in his field of work as a teacher in the field of physical education and as a researcher on the subject of total quality and training programs within the framework of the philosophy of total quality

Through the above, the researcher was able to obtain (36) paragraphs, from which the tool was formed in its final form. Three levels were placed in front of each of these paragraphs in terms of its necessity and degree (high, medium, weak) and with corresponding weights in the form of (1,2,3) respectively. The validity of the tool that was used was found, as validity refers to the degree to which the scale should be able to measure the phenomenon or characteristic for which it was developed (Kadhim, M. J., Shihab, G. M., & Zaqair, 2021), and the validity of the tool represents one of the necessary means in judging its suitability and the validity of the tool refers to its ability to measure what it was (Hammood et al., 2024) originally developed to measure. and after completion Scale And before susceptible on sample, It was completed Apply it on number from Individuals community Search And the adult Their number is (3) individuals. And that To get to know on bezel clarity Paragraphs And clarification any paragraph not Understood Definition some Terminology Incoming in Scale And get to know on directions The answer And the mechanism to choose Alternatives The closest to reality or that He wants The Respondent her choice in order to Represent strategy a job Suggested for him in the future And get to know on Difficulties that may facing Sample And efficiency a team the job assistant Appendix.

In order to determine the validity of the tool, apparent validity was used by presenting the tool to a group of specialists in the field of physical education, psychology, and educational administration, a group of experts in total quality management, and a group of training staff who were asked to express their opinion and advice on the validity of the questionnaire paragraphs or not

,In light of the opinions and observations provided by the arbitrators regarding deleting, amending, replacing and adding some paragraphs, after their number was (36) paragraphs paragraphs remained, representing the tool in its final form as Appendix No. (2), where (27) the paragraphs were excluded for which the calculated (Chi 2) value was less than the tabular (Chi 2) value of (3.86) at a significance level of (0.05) and a degree of freedom of (1), as shown in Table

Table (1)

It shows the experts' opinions, the calculated and tabulated Chi -square value of their answers, and the percentage of agreement or disagreement with the paragraphs

Paragraphs	Agree		Disagree ments		Ka 2 Calculated	Ka 2 Ta bular	Signi ficance Mora le
	nu mber	%	nu mber	%			
36,35,34,32,31, ,30,29,28,27,26 25,24,23,22,21, ,20,19,18,17,16 13,11,10,9,8,6,5 4,3,1,	8	100	-	-	8	3.84	Function
2,7,12,14,15,33	6	75	2	25	2		Not significant

Presentation and discussion of results

To answer the research objective related to identifying the degree of importance of applying the Total Quality Management strategy in the training process for teaching staff in physical education, the weighted averages and percentage weights of the paragraphs were extracted in terms of the degree of importance of applying Total Quality Management in the training process, which was answered by the research sample members. Accordingly, the paragraphs were arranged in descending order as shown in .Table (2)

Table (2) Paragraphs arranged in descending order of necessity and importance

Sequence	Sequence in the tool	weighted mean	Weight Percentage
1	5	3	96.7
2	10	2.9	93.5
3	14	2.9	93.5
4	17	2.8	90.3
5	1	2.8	90.3
6	19	2.7	87.00
7	21	2.7	87.00
8	31	2.7	87.00
9	18	2.6	83.8
10	29	2.6	83.8
11	24	2.6	83.8
12	9	2.5	80.6
13	3	2.5	80.6
14	28	2.5	80.6
15	30	2.5	80.6
16	20	2.4	77.4
17	26	2.4	77.4
18	25	2.4	77.4
19	8	2.4	77.4
20	7	2.3	73.5
21	6	2.2	70.9

22	2	2.2	70.9
23	23	2.1	67.7
24	4	1.9	61.2
25	15	1.8	58
26	16	1.7	56.4
27	27	1.5	48.3
Overall average		2.4	78.3

The overall average of the paragraphs was a weighted average of (2.4) and a percentage weight of (78.3), which is above the cut-off threshold and at a good level. This indicates the necessity of employing and applying the principles and standards of total quality management in the process of training teaching staff, which is an answer to the main research objective, in addition to reviewing the concept previously mentioned by ,the research sample(Ahmed Amer Abdul Hussein, 2020) which was clear in their answers in terms of the desire and urgent need to apply such modern and contemporary .administrative philosophies in the training process

The results also indicate, through the aforementioned table, that the paragraph that ranked first in terms of necessity and importance is paragraph (5), which states (preparing the appropriate and acceptable climate for understanding the culture of total quality among workers and trainees), with a weighted average of (3.00) and a percentage weight of (96.7). This is attributed to the importance of supporting and enhancing the understanding and awareness of the importance of the culture of total quality among trainees, as it contributes to enhancing and motivating these people to gain teaching and .administrative experience within the framework of the culture of total quality (harris.amrik, 2017).

In the second place in terms of the most important paragraphs, paragraph (10) came, which states (providing competent professors and lecturers in the field of total quality and training methods on it), and its weighted average was (2.9) with a percentage weight of (93.5), which shows us that providing professors and lecturers specialized in the field of total quality and capable of employing the principles and standards of total quality in the training programs provided to the teaching staff that they train, given that training based on total quality can only be done through trainers, administrators, and educators who understand and have a high level of knowledge and awareness of the .methods and systems of total quality management

It is clear from the same table that the least important paragraphs in terms of their necessity in the training process from the perspective of total quality management were paragraphs (16) and (27) respectively, with weighted averages (1.7) and (1.5) and percentage weights (56.4) and (48.3) respectively, which stipulated: (Providing means of transportation for trainees and workers during the training course period) and the other Providing a clear and accurate database containing complete information about trainees) .(and training processes

This result can be explained by the lack of awareness of the culture of quality of the training process and its professional return among trainees, as they tend to care more about comforts such as transportation and others than about the benefit expected from these courses, as well as the lack of a solid and accurate database about the training process and its degree of quality in accredited training centers, i.e. the lack of academic and practical scientific aspects that would achieve comprehensive quality standards in training processes. This is due to the current circumstances that the country is going .through in general

Conclusions

Through the results extracted from the current research, the researcher was able to :come up with a set of conclusions, which are

Training and training processes are in dire need of absorbing everything that is new and important to advance the benefit derived from them, such as applying the concept .of total quality management

The material aspects, support and moral guidance of the teaching staff (trainees) and those in charge of these training operations have a great and important impact on the .success of implementing this modern philosophy

Despite the many studies in the fields of training and total quality, we clearly see .a great weakness and deficiency in integrating these two concepts

The presence of leaders with a high degree of responsibility and awareness of the concept of comprehensive quality has a direct positive impact on the success of .implementing this method in training teaching and educational cadres and others

Despite the answers of the research sample members and their desire to apply and adopt this concept, some of them do not have sufficient knowledge and information about .the philosophy of total quality

Recommendations:

Seeking to spread the culture of comprehensive quality among the administrative leaders responsible for the training centers, who are responsible for preparing the training programs and their operations

Trying to employ the principles and standards of total quality management in all training programs approved for training teaching and educational cadres and others for various specializations

The necessity of reviewing in detail the approved global models in training by sending training leaders to training courses and programs outside Iraq

It is necessary to select administrative leaders for the training process who have experience, professionalism and knowledge of all modern developments used in operations as a tool for comprehensive quality

Seeking to involve administrative and technical leaders in charge of educational training centers in development and qualification courses outside the country to learn about modern concepts in training, including the concept of comprehensive quality

Establishing a special department for comprehensive quality management in the Directorates of Preparation and Training in the Ministry of Education, like other departments concerned with the training process.

Appendix (1) Support staff

T	the name	Job	Workplace
1	Ali Ibrahim Mohammed	student	PhD Student / University of Technology Computer Engineering /
2	Osama Ali Hussein	student	Master's Student / College of Physical Education and Sports Sciences / University of Basra
3	Mohammed Hussein Alawi	employee	Ministry of Higher Education and Scientific Research / Basra

4	M.M. Namir Mohammed	Teaching	PhD / Ministry of Education
6	Mohammed Ali Khalaf	student	/ PhD Student / University of Anbar College of Physical Education and Sports Sciences
7	Wajdan Salman	Teaching	Master / Physical Education and Sports Science University of Maysan

Appendix (2) Search tool (scale)

T	Paragraphs	Degree of importance		
		H gh	m dle	weak
1	Diversifying the training methods used according to the needs of the trainees in order to achieve quality			
2	Focus on the continuous development and improvement of comprehensive quality standards in the training process			
3	Providing administrative and educational leaders who have sufficient awareness of the concept of comprehensive quality in managing the training process			
4	Adopting modern and advanced training programs that are in line with the philosophy and thought of total quality			
5	Creating an appropriate and acceptable climate for understanding and accepting the culture of total quality among employees and trainees			

6	Drawing up the objectives, vision and mission of the training programs provided according to the concept of total .quality			
7	Determine the training requirements for the training staff and include them in the training program preparation .plans			
8	Involving training cadres and those concerned with its management in intensive courses in the field of total quality management			
9	Motivating trainees to write research and studies .while participating in training courses			
10	Providing competent professors and lecturers in the .field of total quality and training methods			
11	Preparing and equipping leadership and administrative cadres for training in various educational and scientific specializations in order to achieve quality in the .training process			
12	Coordination to establish international communications and agreements to hold training courses for advanced cadres in accordance with recent developments in comprehensive quality management .systems			
13	Providing appropriate training halls and equipment .in an effort to achieve quality training			
14	,Lecturers are selected based on the certificates scientific specialization appropriate for the trainees, and experience in order to achieve high quality in the field of .teaching			
15	Establishing the principle of strategic planning for the entire training process so that it is consistent with the .concept of total quality			

16	Adopting advanced scientific methods in the teaching process in an effort to achieve comprehensive .quality for employees and trainees			
17	Emphasis on achieving quality outputs for trainees .from the achieved training programmes			
18	Activating the role of educational and professional media for the importance of training according to the .perspective of comprehensive quality			
19	Do not delay the financial dues of lecturers and .trainees			
20	Providing modern and advanced laboratories and .educational tools for training to achieve high quality			
21	Diagnosing and discussing training problems through the results of research and studies prepared by .trainees			
22	Relying on various feedback methods to ensure the .quality of training outcomes			
23	Approving a special card for the trainee to update formation, conditions and specifications for nomination training courses according to the comprehensive quality .management methodology			
24	Issuing a booklet that deals with training programs within the framework of the culture of comprehensive .quality, their objectives and dates			
25	Providing a library containing modern sources that provide information to trainees during training courses			
26	Providing transportation for trainees and employees .during the training course			
27	Providing a clear and accurate database containing mplete information about trainees and training processes			

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The effect of rehabilitation exercises with body weight and rubber resistance on the range of motion and the strength of the sprained ankle muscles in female rugby players

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Abstract

The study aimed to prepare a set of qualifying exercises to improve the muscular strength of the muscles surrounding the ankle joint by applying different resistances according to the nature of the movement of this joint, which is one of the second moving joints (flexion, extension and rotation of the right and left) in order to increase the efficiency of all muscles working on this joint according to those movements and identification On the impact of these exercises and assume that there will be statistical differences between the two tests of the research sample. The researcher used the semi-articulated experimental method with a pre- and post-test for one group. The injury was evaluated on the women's national team players during the season (2021-2022), who numbered (18) players, aged (18-20) years, body masses ranging from (51.5-72.5) kg, and lengths ranging (1.61-1.71) meters With an average of (1.68) meters, and the number of the final sample members reached (6) players, representing (33.3%) of the original research community. The following (arithmetic mean, standard deviation, T.test for correlated samples). The results of the study showed an improvement in the kinematic stretches and the strength of the ankle muscles on the various axes of the movement of the foot. He added, however, that the level of development of the strength of the ankle muscles was greater than the level of development of the kinetic stretches. The researcher recommended the necessity of applying the exercises that were used in the research

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in the case of an ankle sprain for its effectiveness in improving the functional duty of the foot, and conducting similar research and studies for the rest of the games and on the ankle joint, and special exercises should be prepared for the ankle muscles to avoid injury in the future.

Keywords: flexibility, muscle fibers, tendons.

Introduction

Rugby is one of the most popular sports worldwide, alongside football and cricket. In recent years, the game has gained significant popularity in many countries, attracting players ranging from elementary school students to adults. Rugby requires running, strength, and endurance, as players must contend with various forces during movement, including collisions with opposing players and the physical demands of changing running direction while navigating the playing surface. Additionally, players must run while carrying the ball, which increases the risk of injuries due to overuse during both training and matches. These activities generate loads and stresses on the musculoskeletal system, leading to various injuries such as tendonitis, sprains, and tears of the ligaments surrounding joints, particularly in the lower extremities, including the ankle, which is often prone to sprains and ligament tears. Such injuries are painful and frequently occur during collisions with other players or sudden changes in direction to evade opponents or execute feints. While these injuries are generally not considered severe, they can negatively impact performance and may lead to more complex conditions if not properly addressed by a qualified sports medicine specialist.(Kadhim, 2024)

It is well established that the ankle joint is the most susceptible to injury in sports. Previous studies estimate that approximately 25% of sports injuries involve the ankle (Fong DT, 2007). Even in rugby, which carries a higher risk of injury compared to other sports, the ankle joint is identified as a site with a high incidence of injury (Yeomans C, 2018; Kaux JF, 2015). Furthermore, it has been reported that 17.5% of all injuries sustained by rugby players affect the ankle joint, with lateral ligament injuries due to ankle sprains being the most common. This underscores the importance of focusing on the prevention and treatment of injuries, as well as improving rehabilitation programs (Sankey RA, 2008).

As rugby is a contact sport, traumatic injuries to the lower limb joints occur frequently due to the demands of movement and the various required actions. (Jawad et al., 2024) Ankle sprains can arise from contact forces or rotational forces during rapid directional changes or interactions with other players, given the nature of the game's speed and contact. The research problem centers on how to rehabilitate the ankle joint effectively post-injury to ensure increased strength and a

swift return to play, along with rapid recovery from injury and restoration of strength and flexibility, which are crucial for successful rehabilitation.(Nashwan, 2024)

Therefore, the objective of this research is to develop a set of rehabilitative exercises aimed at improving the muscular strength of the muscles surrounding the ankle joint. This will involve applying varying resistances according to the specific movements of the ankle, which is characterized by flexion, extension, and rotational motions. (Nashwan & Allawi, 2021) The goal is to enhance the efficiency of all muscles acting on this joint, aligned with these movements, and to assess the impact of these exercises. It is hypothesized that significant statistical differences will emerge between the pre- and post-intervention assessments of the research sample.

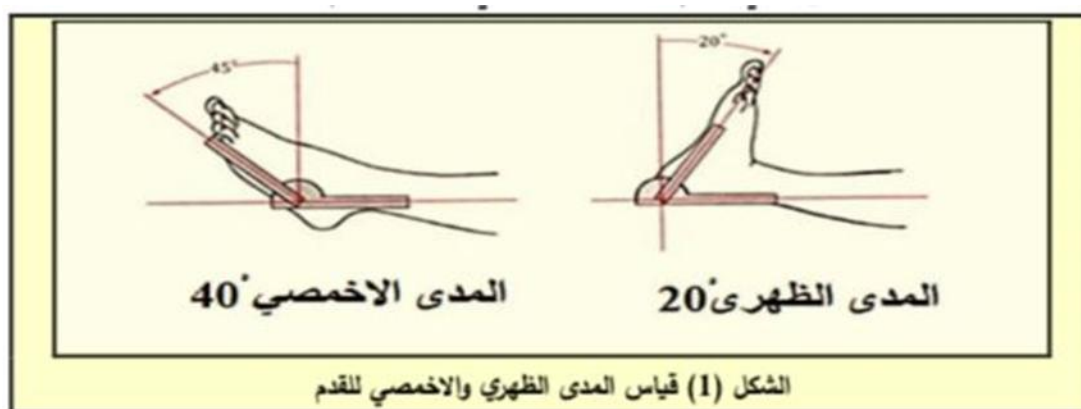
Methods and Tools:

The researchers employed a quasi-experimental design with a pretest-posttest approach for a single group. The study evaluated injuries among the national women's team players during the 2021-2022 season, consisting of 18 players aged 18 to 20 years, with a body mass ranging from 51.5 to 72.5 kg and heights between 1.61 and 1.71 meters, averaging 1.68 meters. The final sample comprised 6 players, representing 33.3% of the original research population. Injuries were assessed by a physician using a detailed injury report form for each case.

Measurements of Ankle Joint Range of Motion: (Coetzee & Castro, 2004)

Range of motion was measured using a circular goniometer, with the zero position defined as 0 degrees when the foot is positioned at 90 degrees from a supine position. Dorsiflexion of the foot was measured in degrees from the zero position until the foot's axis was read as a moving arm on the goniometer. Similarly, the degrees for plantar flexion, as well as for medial and lateral foot rotation, were recorded, as illustrated in the corresponding figures for each measurement:

- Measurement of the dorsal range for foot flexion and the plantar range for foot rotation:



Medial and Lateral Foot Rotation Around the Ankle:



Muscle Strength Testing of the Ankle Joint: (Al-Majeed, 1999)

A dynamometer and a testing platform were used to measure the muscular strength of the ankle muscle group from the following positions: dorsiflexion strength test, plantar flexion strength test, medial ankle flexion strength test, and lateral ankle flexion strength test. The subject adopts a seated position to test ankle strength, with one end of the dynamometer's metal chain attached to the front of the foot being tested, and the other end secured to the dynamometer in a fixed position. The subject then performs the required movement, at which point the dynamometer's

indicator records the measurement. Each subject is given two attempts, with the better score being taken.



Field Procedures:

A pilot study was conducted on January 15, 2022, at 2:00 PM, during which the specific tests and exercises were applied to two players. This aimed to assess the participants' understanding of how to perform the tests, the time required for execution, the nature of the exercises to be used in the study, and the efficiency of the supporting team.

The researcher conducted the pretests on January 20, 2022, in the "Rugby Gym" at 1:30 PM, beginning with the range of motion assessments. A 15-minute break was provided before resuming the ankle strength tests. The post-tests were conducted on March 15, 2022, following the same timing, procedures, and conditions as the pretests.

Exercises Used:

Resistance was applied at varying positions relative to the ankle joint, exerting force against the muscles acting on the ankle using elastic bands and cloth towels. The location of resistance changed according to the foot's position and support. These exercises were performed for 30 to 35 minutes, four days a week, over a period of six weeks. The difficulty of the exercises was progressively increased based on the achievable range of motion, ensuring that the player did not experience significant pain during performance. Subsequently, the intensity of the exercises and resistance was gradually increased according to pain indicators and the restoration of joint movement within the required ranges. The implementation of these exercises commenced on January 22, 2022, and continued until March 8, 2022.

Statistical Methods:

The Statistical Package for the Social Sciences (SPSS) was used to extract the following statistical measures: mean, standard deviation, and the paired samples t-test (T.test).

Results:

Table 1 presents the values of the differences for the ankle range of motion tests.

	Variables	test	f	df	S.	Sig.	T	Sig.
1	Dorsiflexion Test	Pre-test	12.43	1.18	6.5	1.312	4.951	.000
		Post-test	18.93	52				.000
2	Plantar Flexion Test	Pre-test	21.97	1.36	11.56	2.164	5.34	.000
		Post-test	33.53	29				.000
3	Mediation Rotation Test	Pre-test	9.10	2.07	6.21	1.397	4.444	.000
		Post-test	15.31	17				.000
4	Lateral Rotation Test	Pre-test	16.97	1.34	9.85	2.003	4.917	.000
		Post-test	26.82	39				.000

Table (1) Difference values for ankle range of motion tests

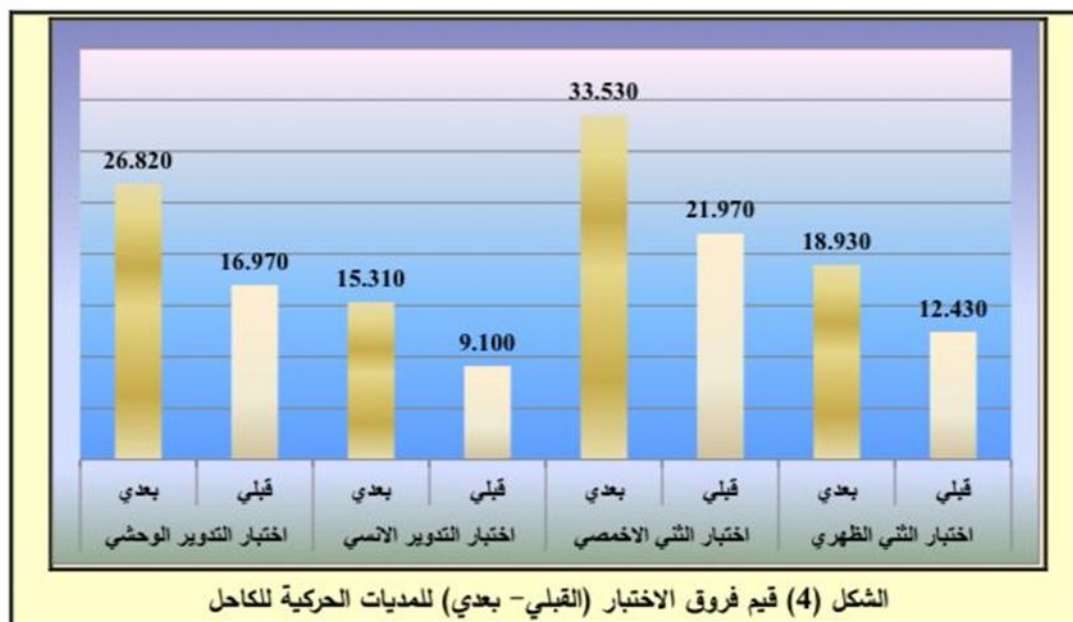


Figure 4: Values of Test Differences (Pre-Test - Post-Test) for Ankle Range of Motion

	Variables	test	f	df	S.	Sig.	T	Sig.
1	Dorsiflexion Test	Pre-test	10.17	1.472	8.50	.619	13.729	.000
		Post-test	18.67	.516				.000
2	Plantar Flexion Test	Pre-test	9.00	1.549	7.00	.856	8.174	.000
		Post-test	16.00	.894				.000
3	Mediation Rotation Test	Pre-test	8.67	1.633	7.67	.955	8.032	.000
		Post-test	16.33	1.211				.000
4	Lateral Rotation Test	Pre-test	9.00	1.549	6.67	.803	8.305	.000
		Post-test	15.67	1.033				.000

Degree of freedom = 5.... significant at (sig) > (0.05).

Table (2) Difference values for ankle muscle strength tests

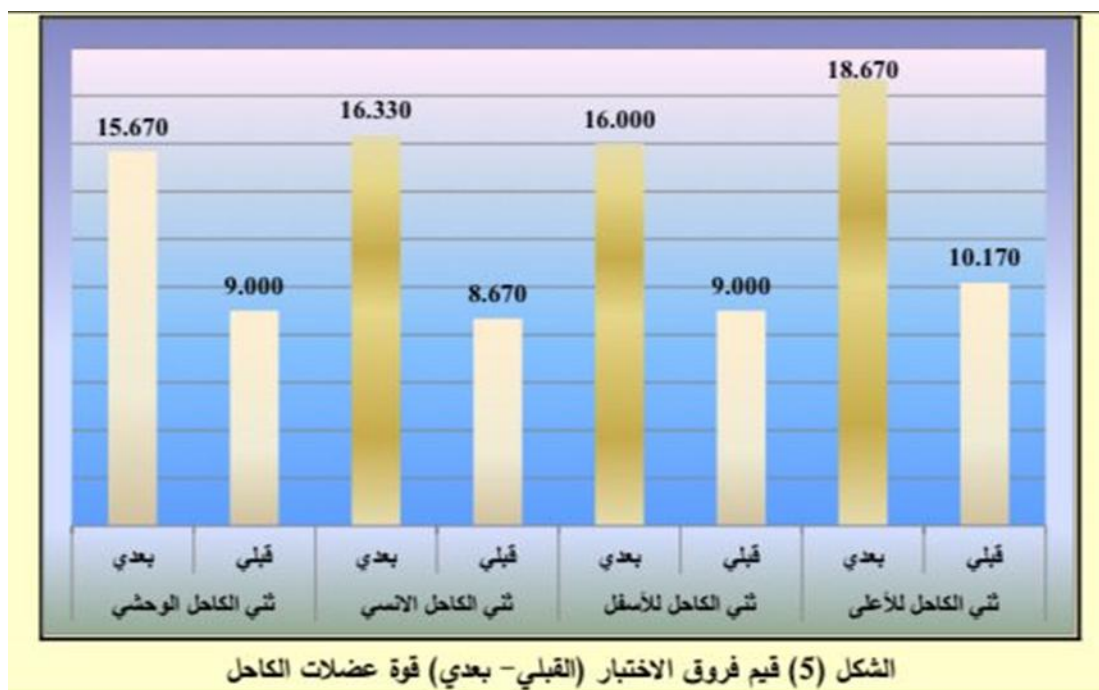


Figure 5: Values of Test Differences (Pre-Test - Post-Test) for Ankle Muscle Strength

Discussion

Table 1 shows significant differences favoring the post-tests of all the range of motion (ROM) assessments conducted on the research sample. The table also indicates that the plantar flexion ranges are greater than the corresponding dorsal flexion ranges, and the lateral rotation ranges exceed those of the medial rotation. Generally, flexion rates are higher than rotation rates, which aligns with the anatomical function of the joint, ligaments, and muscles, as well as the required movement demands. These variables demonstrated different rates of increase: the dorsal flexion test showed an increase of 52.29%, while plantar flexion increased by 52.62%. Medial rotation exhibited a 68.24% increase, and lateral rotation showed a 58.04% increase, suggesting that the rates of increase for rotation are higher than those for flexion.

Table 2 reveals significant differences favoring the post-tests of all ankle muscle strength assessments within the research sample. It shows that the ranges for upward and downward flexion are greater than those for medial and lateral flexion. The rates of increase for these variables also

varied: upward ankle flexion increased by 83.58%, downward flexion by 77.78%, medial flexion by 88.35%, and lateral flexion by 74.11%.

These results indicate a significant improvement in joint movement according to these ROM parameters, which is essential for sustaining actions such as pushing, jumping, and running during play and training. (Manaf, 2022) The ankle is a weight-bearing joint composed of various bones, tendons, and ligaments that collectively support the body's weight while allowing for mobility. Any lack of coordination in dynamic position control can lead to an imbalance in limb movements. Strengthening exercises for the ankle may assist individuals suffering from pain, injury, or movement difficulties (Gribble, 2016).

The greater range of motion is indicative of muscle recovery, determined by the strength of the muscle groups responsible for movement. To enhance this range, rehabilitation or training is necessary, whether in the short term or following prolonged injury (Jaber, 2010).

In terms of physical exercises, it is important to note that the researchers employed both static and dynamic methods in their rehabilitation sessions, incorporating stretching, relaxation, and proper training techniques that utilized a combination of isometric and dynamic contractions. This ultimately serves the development of joint range of motion. Flexibility refers to the ability of muscles, associated tendons, and surrounding ligaments to extend sufficiently to allow full or extensive movement. Flexibility significantly contributes to reducing the incidence of sports injuries and muscle tears, as well as in overall preventative measures (Qablan, 2012).

Stretching exercises act as countermeasures to movement restrictions by extending the muscles to their maximum possible length. These exercises help to separate and align muscle fibers, allowing them to lie parallel and alleviating adhesions. Regular performance of these exercises can gradually restore most muscle tissues to their natural length over time. The researchers noted that the improvement in range of motion is not solely due to stretching and joint strengthening exercises, but is also associated with a reduction in pain over time. Thus, the enhancement of the range of motion is also linked to the alleviation of injury-related pain by the end of the program, which leads to an increased range of motion and further stretching of the muscles involved (Raouf, 2005).

One of the primary objectives of rehabilitation exercises is to protect the athlete from injury. One method is through high degrees of flexibility training for muscles, ligaments, and tendons, as it significantly enhances safety in performance (Al-Jabali, 2000). Furthermore, the use of elastic bands and supports has a substantial impact on joint range of motion, compelling the

athlete to perform movements in various directions, thus stimulating neural signals and enhancing sensory levels to correspond with the range of motion. This type of activity increases joint flexibility and reduces movement restrictions, promoting blood flow to the areas that significantly nourish the responsible ligaments and muscles. The use of elastic bands, which provide varying resistance levels depending on the tension applied, yields positive results in the sensory stimulation of the affected area and aligns with joint flexibility (Dill KE, 2014).

These exercises and tools play a crucial role in increasing joint strength and enhancing physical activity. When these exercises are balanced between strength training and both positive and negative stretching—especially when using elastic bands—they significantly impact the joint's range of motion. There is a relationship between strength and the angle of the ankle joint, especially when these rehabilitation exercises incorporate resistance that compels the joint to achieve a greater range of motion according to training periods (E. Kato, 2013).

Research indicates that the use of resistance plays an important role in improving or maintaining physical performance, and stretching exercises enhance the flexibility of the ankle joint (R. L. Gajdosik, 2007). Regarding the impact of these exercises on joint strength, researchers have noted that strength results are substantial due to the recruitment of numerous motor units. The increase in motor unit recruitment is a consequence of training or implementing rehabilitation exercises tailored to muscle capability, (Ismaeil & Jawad, 2023) indicating the efficacy of the exercises included in the rehabilitation program, which in turn increases muscle strength and the effectiveness and number of motor units. The use of elastic bands providing resistance based on the level of tension, (Munaf et al., 2021) coupled with both static and dynamic training methods, is vital for developing muscle strength and contractions. Static muscle training is important for stabilizing and guiding muscle groups to support the athlete's sport-specific form. The benefits of these exercises are maximized when sufficient time is allocated for them. They lead to slight increases in the size of the muscle subjected to such exercises, and athletes can perceive the true value of these training sessions through their sense of strength and improved performance, particularly when training doses are organized correctly between work and rest, (Manaf, 2015) allowing full relaxation of the muscle during isometric exercises, thus overcoming potential issues and injuries. Consequently, significant strength development becomes apparent. Static training offers a greater advantage for developing muscle strength compared to dynamic training (Al-Amir, 2010).

However, if isometric training is utilized excessively, particularly when focusing on one side, while neglecting balanced training, it negatively impacts muscle movement qualities. Thus, the researcher adopted balanced training by incorporating dynamic exercises into the prescribed

rehabilitation regimen. This type of contraction alters the muscle length and facilitates muscular adaptation. Positive isotonic contractions are essential for executing athletic movements, leading to an increase in muscle strength, albeit to a lesser extent than that achieved through isometric contractions. Consequently, physical therapists should consider employing either type of exercise (static or dynamic) or a combination of both in patient rehabilitation, particularly in advanced stages (Georgios Koutras et al., 2012).

In this context, the researchers adapted their exercises based on the tools used and the progression of muscle loading. The use of a graduated approach in rehabilitation exercises yielded positive results in improving muscle strength, considering the varying levels of resistance during the phases of contraction and relaxation. Training with elastic bands that expose the joint to specific types of resistance, (Kadhim, 2024) along with special balance balls and movements performed on them, constitutes an effective method for preparing athletes by utilizing progressively increasing resistances capable of generating or countering strength, enhancing muscle volume and improving performance, alongside changes in joint components, without necessarily employing maximum or sub-maximal resistance (Al-Nimer, 2001).

Furthermore, resistance training has been shown to enhance muscle strength in healthy athletes undergoing rehabilitation, indicating improvements in muscle performance (Harries, 2012). Performance readiness refers to the muscle's capability to withstand rapid and sudden movements in various directions. (Awad et al., 2024) Initially, the program included slow movements aligned with the pain level observed in certain exercises. Rehabilitation using resistance training also bolsters muscle strength to protect against future injuries or recurrences post-rehabilitation. The researchers considered the progression of load components in terms of intensity, repetition, (Karam Salam Ismaeil & Kadhim, 2023) environmental rest periods, and variations in exercises, which are significantly important and have unique characteristics in both training and rehabilitation. Research has shown that the neuromuscular system responds more effectively when stimulated variably, necessitating surprising adaptations, implying the performance of diverse exercises for several days while altering repetitions, intensity, and exercises on different days (Faraj, 2012).

Static training, where effort remains constant and speed is stationary, tends to favor strength at the expense of speed. The greater the resistance used in training, the more positively it reflects on strength development at the expense of speed, and vice versa in the case of reduced resistance and increased speed during exercise. The development of the dynamic stretching technique favors speed over strength (Saleh, 2015). Furthermore, resistance training, both static



and dynamic, has proven successful in increasing joint strength during a 6-8 week rehabilitation period (Jensen, 2014).

The prescribed exercises allowed the sample to perform a greater number of movements during their specific training without experiencing pain, as previously noted during advanced rehabilitation periods. One study found that the use of resistance or elastic bands provided greater resistance in the ankle during single-leg jump tests, demonstrating better control of required movements and injury prevention (Alex Souto Maio et al., 2020).

The goals of ankle injury rehabilitation include controlling chronic inflammatory processes, restoring full range of motion in the ankle, increasing muscle strength, and improving sensory capabilities, which can be achieved through various physical therapy exercises (Shaharudin, 2018). Proper exercise techniques and correct terminologies can significantly assist in fully restoring the ankle's function and strength. The researcher recommends incorporating flexibility and stretching exercises for the joint along with training exercises, as they are highly beneficial for early rehabilitation. (Kazim et al., 2019)

Conclusions

The study results indicate improvements in the range of motion and strength of the ankle muscles across different foot movement axes. Additionally, it was observed that the level of strength development in the ankle muscles exceeded that of the range of motion improvements. The researchers recommend the implementation of the exercises used in this study for ankle sprain rehabilitation due to their effectiveness in enhancing the functional capacity of the foot, and suggest further research and studies on other sports and the ankle joint, alongside the need for specific training programs for ankle muscles to prevent future injuries.



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The effect of using special intense exercise accompanied by intermittent electrical stimulation to get rid of lower neck pain among professors of the College of Science - University of Baghdad for ages (40-60) years

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Abstract

Lower neck pain is one of the problems facing all ages, especially the elderly, as it revolves around the causes of this pain from many diverse factors. The aim of the research is to use special intense exercise accompanied by intermittent electrical stimulation to get rid of lower neck pain among professors of the College of Science - University of Baghdad for ages (40-60) years and to identify the extent of the effect. The research assumed the presence of statistically significant differences. The research sample represented professors at the University of Baghdad - College of Science who suffer from continuous pain for the period between (10/15/2023) and (1/15/ 2024) and their number is (5), The researchers used the experimental method, a single experimental group design with pre- and post-tests to suit the nature of the research problem. The SPSS program was also used to process the data statistically. According to the results collected, it was concluded that the special intense exercise accompanied by intermittent electrical stimulation contributed to getting rid of pain through... Reducing the degree of pain within a short period. The researchers recommended using these special exercises and intermittent stimulation as guidance to relieve pain in other similar cases. **Keywords:** Special intense exercise, intermittent electrical stimulation, the pain, Below the neck.

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introduction

The spine consists of (7) cervical vertebrae, followed by (12) thoracic vertebrae that connect with the ribs, then (5) lumbar vertebrae that form the lower back, followed by (5) sacral vertebrae, which are fused together, then (4) coccygeal vertebrae, which are also fused and are called the coccyx (canis, 2009, p. 49), and that pain below the neck is one of the problems facing all ages, especially the elderly, as it revolves around the causes of this pain, many Various factors, including sitting for long hours on mobile phones and computers, lack of exercise, poor nutrition, sleeping using an uncomfortable pillow, and neglecting minor pains that later become a problem that the individual suffers from. (Kadhim et al., 2021) The goal of the research is to use intense special exercise accompanied by intermittent electrical stimulation to get rid of of pain below the neck among professors of the College of Science - University of Baghdad for ages (40-60) years and to identify the extent of the effect. The research assumed the presence of statistically significant differences, and some previous studies dealt with subject variables. The research study, including the study (Mohamed, 2019), whose most important objectives is to develop a therapeutic rehabilitation program that includes a combination of manual therapy techniques (therapeutic massage - manual therapy with high-speed, low-range thrust - manual movement with oscillating thrust) with muscle stretching exercises to rehabilitate women with pain. Simultaneous and chronic pain in the neck and lower back resulting from a swollen disc, and studying its effect on pain, range of motion, and muscle strength in the neck and lower back, and comparing the proposed method. To qualify with the traditional methods used in these cases. Then, we followed up on the effectiveness of this method after the end of the program, and the most important findings were that we found statistically significant differences in pain, range of motion in all directions in the neck and lumbar region, and muscle strength between the control and experimental groups and in Favor of the experimental group in all stages of measurements. There was a rapid and statistically significant decrease in the degree of pain in the neck and lower part. The back of the experimental group in the inter-measurement compared to the pre-test represented twice the percentage of decrease in pain in the control group, as the percentage was 53.4% and 45.4%, respectively, for the experimental group. And 28.4 and 22.5%, respectively, for the control group, and the effectiveness of the positive effects of the proposed program continued after the end of the program, as the values of all variables continued to improve in the follow-up period for the experimental group, while the values decreased in the control group (traditional treatment group), and the study (Ahmed, 2009), which was Its most important objectives are to know the effect of the proposed program of electrical stimulation with therapeutic exercises on the decline and disappearance of the severity of sciatica pain resulting from a herniated lumbar disc, restoring the flexibility of the lumbar region, improving its range of motion, and restoring strength. Muscle muscles of the lumbar region and found positive effects on the degree of pain, flexibility, range of motion and muscle strength of the lumbar region. The importance of the research lies in preparing a set of intensive exercises to help alleviate the pain that affects teachers at the University of Baghdad - College of Science.

Method and tools

The research sample represented professors at the University of Baghdad - College of Science who suffer from constant pain for the period between (10/15/2023) and (1/15/2024) and their number is (5), and the researchers used a test to measure the intensity of pain (Hamza and Ali, 2022). (page 158)

The researchers conducted the pre-test on the sample at different times of time, and after two weeks had passed, they conducted the post-test. During the period between the tests, intense special exercises were used accompanied by intermittent electrical stimulation to get rid of pain below the digit over a period of (3) units per week (10). D) for intermittent electrical stimulation. The unit consisted of (5) exercises, and the time of the main section ranged between (20-30) minutes.

The researchers used the statistical bag) SPSS (To process the data statistically:

- 1Arithmetic mean.
- 2Standard deviation.
- 3a test) t (for non-independent samples.

Results

Table 1 It shows the arithmetic means and standard deviations of the test measuring pain intensity in the results of the pre- and post-tests

Variables	Unit of measurement	Pretest		Posttest	
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation
Measure the intensity of pain	degree	6.400	0.547	1.200	0.447

Table 2 It shows the difference of the arithmetic means, its standard deviation, the calculated (t) value, the level of error, and the significance of the differences for the test to measure pain intensity.

Variables	Unit of measurement	Arithmetic teams	Standard deviation	Calculated t value	Error level sig	Connotation
Measure the intensity of pain	degree	5.200	0.836	13.898	0.000	Moral

*Degree of freedom.(4=1-5)

*Significant at the error level (0.05) if the error level is smaller or equal to.(0.05)

Discussion

By looking at tables (1, 2), it is clear that there are significant differences, and it becomes clear that the arithmetic mean is lower in the tests (post-test than pre-test) to measure the severity of pain in the lower neck. The researchers attribute the reason for this to intense special exercise and its contribution to alleviating pain in the lower neck, in addition to The contribution of intermittent electrical stimulation, as integrated physical rehabilitation leads to positive effects in strengthening the affected muscles and contributing to stimulating blood circulation, relieving pain and improving muscle tone (Bakri and Al-Ghamri, 2011, p. 50), and that the use of intermittent electrical stimulation devices has increased the speed of getting rid of much of the intensity of pain, in addition to the use of methods that help in rehabilitating the affected muscles leads to the activation of the circulatory system and the spread of blood in the affected muscles, which leads to the building of the affected muscle fibres. To harm and prevent cases of muscular dystrophy (Ismail and Jawad, 2023, p. 560), as following a systematic biopsychosocial approach to dealing with sports injuries falls on the responsibility of both the sports physician Therapists, strength and conditioning coaches, sports psychologists, nutrition coaches, and the athlete himself (Himmat, Sidak & ,Mandeep, 2017, p. 530), and that the seriousness in working on the special, codified exercises by the research subjects contributed to the decrease in the level of pain, as both (Awaid and Hussein, 2023, p. 712) believe that the application and use of the codified therapeutic exercise contributes particularly effectively to reducing the intensity of pain. The optimal use of new, innovative, complementary methods can help the affected individual improve his health condition and continue the requirements of his daily life, so we see many of them flocking to private gyms to develop Their physical fitness (Khalaf and Abdul-Kazim, 2022, p. 133), as well as the contribution of exercise to prevent these pains from returning again, and (Abdul-Amir and Ibrahim, 2023, p. 534) believe that range-of-

motion exercises without components and with resistance contribute to the prevention of spinal injuries. The provision of medical services within universities is an urgent necessity to preserve all categories of workers in them, and Mahdi, Hussein, and Zannad, 2021, page 123) on the medical service, its instructions, and the treatment methods provided on campus, as applying the appropriate physical exercise for each type of sports injury and contributing to treatment, which falls on the therapists' responsibility, as they must understand the basic principles. For sports training in terms of volume, rest and intensity and apply them effectively (Brody, 2012, p. 220), and that improving flexibility contributes greatly to reducing the intensity of pain (Al-Khazraji, Al-Ani, and Abbas, 2017, page 416), and this was confirmed by both (Mahmoud and Ismail, 2023, page 1067). Rehabilitation exercises contribute to making the state of fluidity in movement. Joints.

Conclusions

According to the results collected, it was concluded that the special intense exercise accompanied by intermittent electrical stimulation contributed to getting rid of pain by reducing the degree of pain within a short period. The researchers recommended using these special exercises and intermittent stimulation as guidance to relieve pain in other similar cases.

Appendices

Appendix 1

A model of rehabilitation units

Week: First

Rehabilitation unit: third

Time for the main part of the unit: 24 minutes (10 minutes intermittent electrical stimulation and 14 minutes special intense exercises)

Exercises	Repetition	Time of one repetition	Rest between repetitions	Groups	Comfort Between groups	Total working time	Total rest time	Total time for one exercise	Rest between exercises
Neck pulling exercise to the right	5	10sec	10sec	1	-	50sec	40 sec	1:30 p.m	45sec

Exercise to pull the neck to the left	5	10sec	10sec	1	-	50sec	40 sec	1:30 p.m	45sec
Exercise to move the neck forward	10	5sec	-	2	30sec	1:40 p.m	30 sec	2:10 p.m	45sec
Neck rotation exercise right and left	10	5sec	-	2	30sec	1:40 p.m	30 sec	2:10 p.m	45sec
Full neck rotation exercise	10	5sec	-	2	30sec	1:40 p.m	30 sec	2:10 p.m	45sec

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The Effect of the (Team - Pair - Solo) Strategy in Learning the Accuracy of the Spiking Skill in Volleyball

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Abstract

This study aims to prepare educational sessions for the strategy (team-pair-solo) in practical volleyball lessons for female students and identifying its effect on learning the accuracy of the spiking skill in volleyball. An experimental design with experimental and control groups was employed on a purposive sample of (30) female students who were to constitute (42.254%) from their community represented by the sophomores at the College of Physical Education and Sports Sciences for Girls / University of Baghdad who are in good standing in the morning study for the academic year (2022-2023), whose total number is (71) students.

According to the determinants of the experimental design, participants were divided into two equal groups, and the accuracy test of the skill under research was determined, and four educational sessions were prepared that were applied experimentally to the students of the experimental group over four consecutive weeks. One session per unit was presented to participants in the experimental group. Participants in the control group received the conventional learning of the accuracy of this skill.

After the completion of the experimentation, the scores of the pre- and post-tests of the students of these two groups were collected and statistically processed with the statistical

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package for social sciences. The researchers concluded and recommended that a strategy (team-pair-solo) can be applied in practical physical education lessons to learn the accuracy of the skill performance in volleyball for sophomores at the College of Physical Education and Sports Sciences for Girls. This application helps in learning the accuracy of the spiking skill in volleyball among students and outperforms its learning among students who learn without such a strategy.

It is necessary to pay attention to provide a learning environment that suits the application of a strategy (team-pair-solo) in practical physical education lessons in volleyball, and it is necessary to pay attention to diversifying the combination between cooperative and individual self-learning within one lesson when learning the accuracy of the spiking skill in volleyball among sophomores at the College of Physical Education and Sports Sciences for girls.

Keywords: (team-pair-solo) Strategy, Accuracy of Spiking Skill, Volleyball

Research Problem

The scientific advancement that we see today in various fields of life is the result of experiences and research through which many results have been inferred and obtained to serve humanity as a whole. This development has been reflected in the field of physical education and its various means and has opened new horizons for researchers and students in the field of teaching methods to learn about the new in the processes of writing information (Safa Abdel Karim Sadiq, 2022), where many strategies have emerged, including the (Team-Pair-Solo) strategy, which is defined as "an educational strategy designed to motivate students to deal with problems that exceed the limits of their cognitive ability."

Students face problems first (as a team, then with the partner, and finally on their own)." (Chotimah 2017, 75). Sahab Ismail (2022) believes that the teaching process is the cornerstone of the desired behavior of individuals to acquire knowledge, values, habits, and other behavior patterns. Haneen Maysam (2023) believes that building the learners' personality is done through a set of successful strategies that lead to achieving the required goals that require regular and elaborate planning.

The nature of teaching the accuracy of volleyball skills is characterized by the interaction between the elements of the teaching process, as is the teaching of the skills of the rest of the team football games. Also, the specificity of the accuracy of volleyball skills requires collective harmony among students, and it must end up learning it to the individual for each of them by relying on itself in the accuracy of skillful performance. In other words,

the process of exchanging and evaluating knowledge between them collectively and then among female students, and it must result in a cognitive regulation that supports the perceptions of each student to rely on herself in skillful performance after investing this interaction and deriving from it what supports her performance for skillful accuracy.

The choice of strategy (team-pair-solo) is determined by what is appropriate for the effective educational process of education objectives, type of content, learners' needs and privacy, and achieving inclusion. All this depends on the positive role the teacher plays because of his effectiveness in the success of educational and teaching work. This is what Sahab Ismail (2022) sees that the role played by the faculty member in education in general is a very important role because it is one of the pillars of the educational process and is the key to knowledge and science for the student. Jinan Ghazi Saqr (2021) also believes that teaching methods need to diversify the mechanisms of directing them in lessons, whether it is a practical or theoretical lesson, to make the learner more capable of increasing information, more effective and involved in the lesson, as this strategy includes the following teaching strategies: (Ramsden, 2022, 14)

- Collaborative Learning: "Students are divided into small teams in this strategy, and they collaborate together to solve problems or accomplish educational tasks, and this type of teaching aims to enhance interaction among students, exchange knowledge, develop communication skills and teamwork, and a variety of activities such as discussions and problem solving, can be used to achieve educational objectives." (Johnson & Johnson 2019, 233-247)

- Jigsaw Classroom: "The subjects are divided into different parts in this strategy, then each student has to become an expert in a specific part, then groups are formed that include members of different groups where they share the knowledge and skills they have acquired, this approach aims to promote collaborative peer learning and promote responsibility in achieving learning." (Biggs & Tang 2017, 11)

- Individual Learning: It focuses on individually providing educational content to each student in this strategy, where lectures or tasks are individually presented to each student, and each of them receives individually, and a variety of teaching methods and individual exercises can be used (Aronson & Patnoe, 2020, 171). Thus, the Team-Pair-Solo strategy is a combination of the three teaching strategies in one lesson according to the tasks assigned to the learners.

Ketchum (2018) stated that "Kagan stated that this strategy allows students to work on problem solving first as a team, then with a partner, and later they will easily solve problems themselves. This means that before solving problems on their own, students first do them as a team and as a pair in this strategy, which means that the teacher is required to

stimulate the students' mind to share their ideas independently because the Team Pair Solo strategy involves students doing the task in that they meet first before they do the task themselves." (Ketchum, 2018, 9)

It is necessary that the strategies in the methods of teaching physical education be characterized by the possibility of their practical application, and that their selection should be improved in light of the determinants of their compatibility among each of the students, the school, and the curriculum, with the availability of various capabilities in the physical education lesson, considering the level of students, their chronological age, and stage of study, and considering the level of their skillful performance and previous experiences, and the availability of material and human resources for the application of these strategies. As well as the necessity and importance of determining the roles of both the student and the teacher in the lesson, and by adopting an appropriate technique to activate the students' role and help them to bring out the skillful performance to appear in a way that is free from common mistakes, in line with the directions of the modern school, and by adopting the clarity of the communication message between students and the school.

Among the most important advantages of teaching with this strategy are the following: (Train 2019)

1. Make the classroom environment interactive.
2. Students are actively involved in the teaching and learning process.
3. Helps develop students' social skills as they communicate, help, and learn from each other.
4. Students learn to think from different perspectives, listen to others' perspectives, and confidently put forward their views.

"One of the advantages of the Team-Pair-Solo strategy is to build a positive feeling in learners through interdependence in order for everyone to succeed, as they must work together and help each other. Kagan states that in this strategy, the team can accumulate the knowledge and skills needed to try the new procedure.

It can be concluded that this strategy can give students the confidence to overcome problems because they see the success of their peers and learn from them" (Sanjaya & Sumarsih, 2019,142).

The influence of teaching with this strategy on learning motor skills in the physical education lesson can reflect the positivity required for its application through the benefit of teaching through it, because of the support provided by this strategy, according to the following: (Apio & Other, 2019, 1-9):

- Increased focus and attention: All learners must coordinate their efforts in a team or pair to achieve a common goal. This enhances the concentration and attention of each other, especially in collective games, when implementing skills accurately and effectively.

- Diversity of experiments and feedback: Through (team - pair - solo), learners can experience different aspects of skill movements, which allows providing diverse feedback and identifying points that can be improved, when testing their implementation or application.

- Stimulate positive competition: Positive competition can arise among members in a pair-team, which motivates learners to improve their personal performance and achieve their goals when applied later in the solo.

- Developing learning and adaptive skills: By experiencing working with different partners or working individually, learners can develop learning skills and adapt to diverse contexts and different circumstances.

- Boost self-confidence: When learners can achieve successes and develop skills in a (team-pair-solo), this will increase their self-confidence and ability to successfully implement skills.

Also, the teaching, whose results lead to improve the skillful performance, depends on the continuity of updating its strategies by delving into the experimentation of its modernity, to seek to achieve more than one purpose in one work by investing its overall advantages in supporting the student's role to determine the tasks required of her in knowing the details of the applied performance of the accuracy of the spike skill in volleyball.

Through the researchers' academic orientation in the methods of teaching physical education, and from their direct knowledge of the methods used in teaching the performance of volleyball skills to female students in the College of Physical Education and Sports Sciences for Girls, they noticed a clear weakness in the level of skillful accuracy of the spike, which calls for attempting the strategy of (team - pair - solo), as an attempt to contribute to the teaching process in physical education in a way that helps students to improve the accuracy of their spike skill in volleyball, and then overcome this weakness they have, considering participants' particularity and level of spike skill. Thus, this study aims to:

1. Preparing educational sessions for the strategy of (team - pair - silo) in practical volleyball lessons for female students.

2. Identify the influence of the strategy of (team - pair - silo) in learning the accuracy of the spike skill in volleyball for students.

Research Hypothesis:

There are statistically significant differences between the results of the accuracy tests of the spike skill in volleyball after between the experimental and control research groups.

Methods

In light of what the researchers mentioned in the problem of the current research, the experimental research methodology was adopted, which is defined as "the method in which we treat and control an independent variable to see its effect on a dependent variable, while observing the resulting changes and interpreting them, whether the experiment includes an independent variable and a dependent variable or more than one independent variable or more than one independent variable" (Al-Mahdi 2019, 214). The experimental design with experimental and equivalent control groups with tight control was also adopted in the pre- and post-tests.

Sample and Sampling

The boundaries of the community of the current research are represented by the sophomores in the College of Physical Education and Sports Sciences for Girls at the University of Baghdad who are in good standing for the academic year (2022-2023), whose total number is (71) students distributed into two classes. The researchers sought to studying them they represent the current research problem community, (15) female students were purposively selected from each class to reach the total research sample (30) students representing (42.254%) of this community, Then, the students of class (A) were selected to be the experimental group, while the students of class (B) were the control group, and the rest of them were selected for the pilot study ($n = 8$) students representing (11.268%) of their original community.

Measurement and Procedures

The researchers adopted the accuracy test of the spike skill in volleyball under investigation (Al-Samarrai, 2002, 56) (Appendix 1). Thereafter, the preparation of educational sessions for the strategy of (team - pair - solo) in practical volleyball lessons by focusing on the application of its contents in the main section of these educational sessions, as most of the steps of such a strategy can be consistent with the nature of the accuracy of the spike skill in volleyball in the physical education course in terms of receiving knowledge and applying performance with the help of peers or colleagues and then individual performance on self-reliance only. This strategy combines cooperative, bilateral (pair), and individual learning according to sequential steps according to the nature of that skillful duty, and the

strategy is implemented in the physical education course for skillful learning for the accuracy of the spike skill in volleyball according to the following steps:

1. Team: The teacher explains to the students the idea of the strategy and she explains to them the spike skill in volleyball and presents a detailed model for it in the applied part of the main section of the lesson. Thereafter, she asks the students from each group to perform a specific student after asking her to analyze the teacher's explanation to her, and manage a seminar among members of the group about the skill, and help the student in enabling her to perform the specified skill.

2. Pair (dual): After completing the management of the seminar among the members of the group about the spike skill in volleyball and helping the student to enable her to perform the accuracy of this skill, as each two students perform the same skill bilaterally and help each other with cognitive support for the skill and in correcting its performance errors.

3. Solo: After completion, each student performs the accuracy of the spike skill in volleyball on her own and corrects her mistakes through internal feedback and self-reliance in completing her task, to apply it by investing the knowledge and assistance she received in the application.

The teacher's role is guidance and close follow-up for educational situations, encouraging teams of students to have positive behaviors, and she changes between groups and between students by following up the improvements in the lesson. After the completion of this preparation, the researchers applied the pilot study on (8) students, who are the determinants of the procedures for this experiment. The purpose of pilot study was to know the obstacles that the researchers may face when they conduct the main experiment, including the requirements for verifying the time of implementation of the test and the educational sessions in the lessons, and they did not face any significant difficulty. According to the determinants of the experimental design of the current research, the pre-tests for the accuracy tests of the spike skill in volleyball were applied on the students of the experimental and control groups in order to ensure the line of initiation of their equivalence in the results of the accuracy tests of the spike skill in volleyball. Thereafter, the contents of (team – pair – solo) strategy was applied on the students of the experimental group, while the students of the control group received the conventional teaching methods, and the lesson included the following time plan:

- The total time of the lesson: (90) minutes divided into the preparatory section (20) minutes, the main section (60) minutes, the educational side (20) minutes, the applied (40) minutes, and the final part of the lesson (10) minutes.

The educational aspect, which has a time of (20) minutes, will be done by applying a strategy of (team - pair - solo) and according to the aforementioned parameters.

The applied side, which has a time of (40) minutes, will include practical exercises on the accuracy of the spike skill in volleyball at the same level for all students in the two groups. These exercises will be sequentially augmented from easy to difficult, as the skill sections will be presented according to tasks, deliberations, and exchange of feedback among students to determine the role of each student at each stage of the strategy (as a team, then with her partner, and finally on her own).

The practical lessons were applied by one session per week for a period of four consecutive weeks and a total of four educational sessions, in order to reach mastery of the accuracy of the spike skill in volleyball. After the completion of this experiment, the post-tests were applied, and the results of the study were processed with the statistical package for social sciences (SPSS) version (28), to calculate the values of percentage, arithmetic mean, standard deviation, independent-sample T-Test, and paired-sample T-Test.

Results

Table 1. Pretest results for the study and control groups

Test and measurement unit	Group and number		Arithmetic mean	Standard Deviation	Levene test	Sig.	t	Sig.	Significance of the difference
Accuracy of spike skill (Degree)	Experimental	5	13.07	3.218	0.384	0.541	0.961	0.345	Non-significant
	Control	5	14.13	2.85					

Non-significant: p-value ≥ 0.05 and degree of freedom $(n1 + n2) - 2 = 28$

Table 2. Pretest and posttest results for the study and control groups

Test Measurement	Group	Condition	Arithmetic mean	Standard deviation	Mean	Standard Error	t	Sig.	Significance of the difference
Accuracy of spike skill (degree)	Experimental	Pretest	13.0	3.2	13	3.8	15	0.001	Significant
		Posttest	26.1	0.9					
	Control	Pretest	14.1	2.8	66	4.4	6.6	0.001	Significant
		Posttest	20.7	1.8					

15 for each group; Significant if p-value ≤ 0.05 and degree of freedom (n-1); Std. Error Mean: Standard Error Mean

Table 3. Posttest results for the study and control groups

Test Measurement	Group	Number	Arithmetic mean	Standard deviation	t	Sig.	Significance of the difference
Accuracy of spike skill (Degree)	Experimental	1	26.13	0.99	9.8	0.0	Significant
	Control	1	20.73	1.87			

Non-significant: p-value ≥ 0.05 and degree of freedom (n1 + n2)-2 = 28

Referring to the results in Table (2), it is clear that the levels of accuracy in the spike skill have increased for students of both the experimental and control groups in the post-tests than these of the pretests.

Referring to the posttest results in Table (3), it is clear that the level of spike skill accuracy has increased for students of the experimental group compared to students of the control group. The researchers attribute these results among the students of the experimental group to the positive effect achieved by the strategy of (team - pair - solo) in practical physical education lessons in volleyball, through which each learner derived knowledge of skill performance to achieve spatial accuracy of the spike skill. The diversification among roles and the transition among them in the lesson helped the learners to delve into the details of skillful performance and how the sound applied practice with repetitions accompanied by feedback to prune the movements of this skill of common mistakes, which was helped by the strategy of (team - pair - solo) by encouraging learners to question and inquire, and allowing movement and group interaction in managing a seminar among members of the group about the spike skill in volleyball and helping the student to monitor her colleague and correct her mistakes, as well as benefiting herself from that correction in the reshaping the appropriate kinetic program to achieve the best accuracy, according to the specificity of the quick spike skill by nature, to create a classroom environment in the volleyball court in which self-confidence and mutual trust prevail, and openness to the opinions of colleagues and acceptance of their views, which further activates their roles in each task of the strategy of (team - pair - solo). This is consistent with the opinion of Haneen Maysam (2023) who believes that the use of such strategies ensures that students are not passive learners rather productive learners within their groups by actively participating in learning with their peers and encouraging each other. These requirements in their entirety with the actual application of educational exercises and the frequency of its performance in each lesson helped in the emergence of the results of spatial skill accuracy at this level, considering that accuracy is affected by increasing repetitions and knowledge of accurate movements of the performance necessary to achieve them to the fullest. "Most of fine movements are very necessary for humans, and how to practice or perform them is an important step that lies in learning them well by correct repetition. Therefore, it is noted that there is a great difference between beginners and skilled when performing any apparent behavior, as the beginner needs to organize the appropriate nerve stimulus. It must be known that repetition (the number of times of performance) alone is not enough for the required learning process to occur, because the process depends on observation, follow-up of performance, and a sense of performance.

In addition to optimally practicing it at the appropriate angle, to note some complex movements that need mastery to perform, such as how to transfer the momentum of movement of body parts, body weight distribution, speed and accuracy control with purposeful compatibility, agility and aesthetic movement, so that the performance process after automatically completing the learning process or the so-called mastery of the skill completely (Bhanu, 2015,144-147).

As well as what all learning processes need to link new information with stored memory, and this is what modern strategies provide, including the strategy under research. This is consistent with the opinion of Zeina Hassan Amer (2022), who believes that modern strategies help the learners to achieve the goal they aspire to, as it includes a set of activities that are represented in selecting and organizing information, repeating and relinking new learning with memory learning. Providing interactive models and applications that allow learners to simulate situations and make appropriate performance decisions, this helps them to apply the concepts they have learned in a safe environment and develop their abilities to make the right decisions at the right time." (Williams & Krane, 2019, 28). This is consistent with the opinion of Malaz Haider who believes that the decision-making process is a process of choosing from a set of alternatives to reach a certain result in a certain situation and time and that making the right decisions in volleyball is one of the most important aspects that player enjoys as "the teacher can assign some learners as coaches to their colleagues so that they train on how to solve the problem in the future on their own, and the teacher's role in this strategy is in guidance, careful follow-up, and encouraging teams and individuals on positive behaviors" (Al-Shammari, 2001, 81). Also, "notifying the learner of the results of his work, comparing him with his colleagues, and realizing the extent of his progress or delay is considered one of the strongest motives for learning, while it was found that neglecting the learner and not notifying him of his position or paying attention to the extent of his progress or delay would lead the learner to boredom and inaction" (Al-Azzawi & Al-Bayati, 2013, 62). It is also "necessary to consider the teachers' attitudes in effectively implementing this strategy, as it can be applied according to the learners' needs, level, and characteristics according to the achievement of practical points" (Smith & Others, 2017, 723-731).

"Modern teaching has shifted from the mechanism of transferring knowledge from an enlightened person to another person ignorant of it, to becoming the process of organizing the class as an effective educational environment, encourages thinking, and represents an environment for mental openness, freedom of expression, opinions, and decision-making. The successful teacher is flexible and uses stimulating teaching strategies, as the teacher becomes one of the sources of knowledge, not the only source of it, and his role moves from a carrier of knowledge to a participant for the learner in building his knowledge, encourages learners to question and inquire, and allowing with a degree of positive noise resulting from movement, interaction, and social negotiation." (Adas 2015, 31).

"The educational environment, including the elements affecting the learning outcomes, has a major role in the learner's activity and positive interaction with educational situations and its elements. One of the most prominent features of this environment is that it is rich in various sources of information, including opportunities for questioning and clarification, and the spirit of cooperation and positive participation prevails in the work, and

self-confidence and mutual trust prevail, and openness to the opinions of others and accept other points of view, and saturated with vitality and activity, and the appropriateness of its physical elements to the requirements of active collective work It includes the necessary tools and equipment required for active learning, including opportunities for various options and alternatives of activities and tools" (Attia, 2016, 244). In addition to what teamwork gives of an increase in self-confidence that is reflected in the performance of the group, the pair, and the individual, and this is consistent with the opinion of (Sawsan Jawdat, 2021) who believes that there are many psychological factors that significantly contribute to the influence on students and there must be a level that they own in order to protect themselves from these psychological influences.

Conclusions

1. The strategy of (team - pair - solo) can be applied in practical physical education lessons to learn the accuracy of the skillful performance in volleyball for sophomores in the College of Physical Education and Sports Sciences for Girls.
2. The application of the strategy of (team - pair - solo) in practical physical education lessons in volleyball helps in learning the accuracy of the spike skill in volleyball among students, and outperforms its learning among students who learn without it.

Recommendations

1. It is necessary to pay attention to providing an educational environment suitable for the application of a strategy of team - pair - solo) in practical physical education lessons in volleyball.
2. It is necessary to pay attention to diversifying the integration between cooperative and individual self-learning within one lesson when learning the accuracy of the spike skill in volleyball among sophomores at the College of Physical Education and Sports Sciences for Girls.

Appendix (1) Spike test in both diagonal and straight directions (Samurai 2002, 56)

The objective of the test: To measure the spike skill in the diagonal and straight directions.

Tools: (10) volleyballs, volleyball court, two mattresses placed in a striped area measuring (3x3) as shown in Figure (1).

Performance specifications: Spike from center (4), preparation by the teacher from center (3) and the tested student has to perform (5 spikes toward the diagonal direction) (organized located in center (5)).

Five spikes toward the straight (organized in position 1) and taking a break between one attempt and another.

Recording

- (4) points for each correct spike in which the ball falls on the mattress
- (3) points for each correct spike in which the ball falls into the planned area
- (2) A point for each correct spike in one of the two zones (A) and (B).

Maximum degree: (40) degrees.

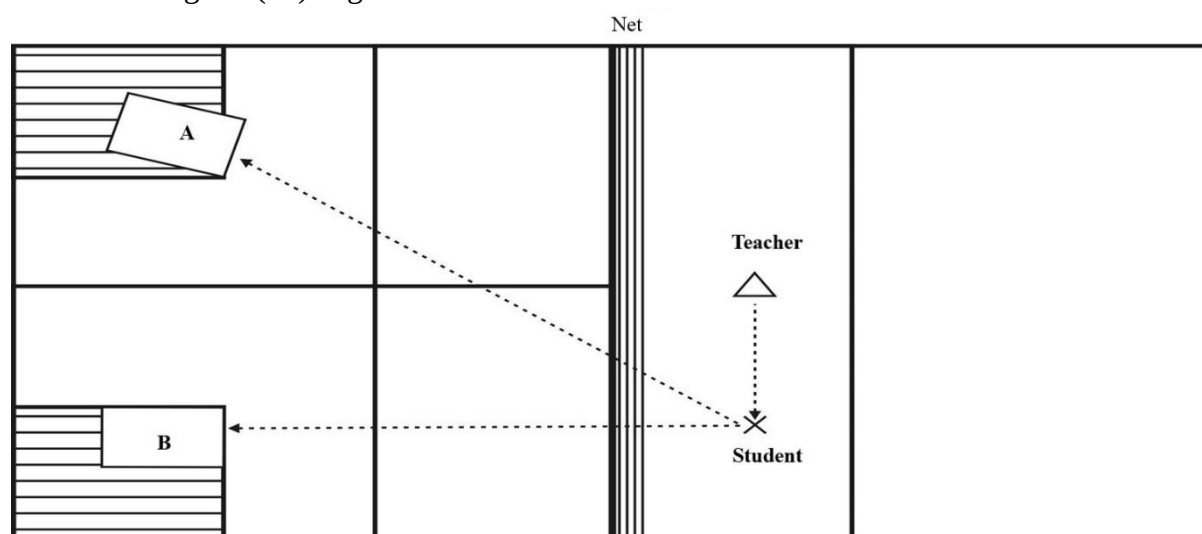


Figure (1) Test of Spike Skill in the Diagonal and Straight Directions

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The effectiveness of using interactive harmonic exercises in improving the level of some physical and motor abilities and intelligence for students aged (9-10) years

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Abstract

We discussed the proper preparation, directing, and implementation of physical education lessons, and clarification of the duties that fall upon the physical education teacher in addition to his physical and skill duties, which is the duty of the physical education lesson. The problem of the research lies in the fact that interactive harmonic exercises are not implemented accurately by physical education teachers because they require great experience, exceptional efforts, and accuracy in performance. The research aims to identify the level of some physical and motor abilities and intelligence among students aged (9-10) years, and to know the effect of some harmonic exercises. Interactivity at the level of some physical and motor abilities and the level of intelligence among students aged (9-10) years. As for the research hypotheses, they are that there are no statistically significant differences between the pre- and post-tests of the control and experimental groups in some physical and motor abilities and intelligence among students aged (9-10) years, and the absence of statistically significant differences in the post-tests between the control and experimental groups in some physical and motor abilities and intelligence among students aged (9-10) years. . The experimental approach was used, and the research population was identified with the students of the Lebanon Mixed Primary School of the Second Rusafa Education Directorate in Baghdad Governorate for the academic year 2023-2024 AD, aged (9-10) years, numbering (30) students. They were divided into a control group, numbering (15) students,

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and an experimental group, numbering (15) students. (6) students were identified as a sample for the exploratory experiment, and the study was applied. (5) tests to measure physical and motor abilities and one test to measure the level of intelligence. After processing and discussing the data, the researchers concluded that the use of interactive harmonious exercises within a physical education lesson has a positive impact on the variables of the study, as the results showed that there were statistically significant differences between the pre- and post-measurements of the experimental group and in favor of the post-measurement in all tests of physical and motor abilities and in the intelligence level of the students, and that the use of traditional teaching methods showed the presence of There were statistically significant differences between the pre- and post-measurements of the control group in all variables of the study except for the two tests (successive jumps in place for 10 seconds, and the Raven's intelligence test), which indicates the presence of some kind of defect and shortcomings in some components of the traditional teaching curriculum.

Keywords : Interactive combinatorial exercises, physical and motor abilities, intelligence level

Introduction:

It is necessary to pay attention and care to school sports and to properly prepare, direct and implement its lessons, which constitute a basic and important step through which the required goals are achieved, since physical education is an integral part of general education and cannot be dispensed with, and since the physical education lesson represents the sound ground upon which other branches of education are built, therefore“ ,the physical education teacher must be concerned with all the matters that contribute to the success of the lesson through his scientific competence and the methods, steps and tools that help him achieve his goals due to the importance of the activities“ ”.Sports activities contribute to the physical, mental, and educational development of all educational levels ”(Al-Jubouri and Sukkar, 1989, p. 9). Students 'mental development can be developed through various physical activities, such as physical exercises in general, harmonious exercises in particular, and small games, as“ such activities depend on perception, which depends on the mental processes that it performs through understanding ”(Rizk, 1977, p. 77). Therefore, the physical education teacher has a duty in addition to his physical duties. Skill is the duty of the physical education lesson and the interactive combinatorial exercises it includes. Its duty is to put students in front of a set of motor problems, the completion of which requires a specific behavior and special performance, and in this way their mental abilities are revealed in their thinking and action. Since the motor structure of a person is linked to the mental structure, as movement gives permanence to the organic systems, maintains them, and gives learning creative thinking, so keeping up with technological progress, which is coupled with mental requirements, is a necessity. Due to the existence of a close relationship between the motor abilities that are characterized by interactive harmonic exercises, through which we seek to develop the level of intelligence, the two researchers believe that the importance of their research stems from this fact. The problem of the research lies in the fact that interactive harmonic exercises are not implemented accurately by

physical education teachers because they require great experience, exceptional efforts, and accuracy in performance, or it may be due to the students' weakness in implementing them in conditions that require high nervous and muscle compatibility. Therefore, they decided to use Interactive harmonic exercises because of their great importance and impact on the development of some physical and motor abilities and the level of intelligence, as it is noted that there is a weakness in the rates of academic achievement at specific levels, with the presence of exceptional cases among some, and this, in the opinion of the researchers, is due to the pressures that fall on students through doubling theoretical lessons and neglecting the physical education lesson and thus neglecting the physical and motor elements that contribute to raising the level of intelligence, for which harmonic exercises are one of the best tools.

Among the studies that dealt with interactive combinatorial exercises is a study (Mohamed Saber 2022 AD), which was conducted on (20) junior football players under (15) years old at the Banha Club - Qalyubia, which concluded that the proposed program using interactive combinatorial abilities training had a positive impact on some of the physical abilities of the sample under study, and the proposed program using interactive combinatorial abilities training had a positive impact on some functional variables in the sample under study. Research (Ali, 2022, p. 45, 81). And the study (Amani Salah 2022 AD), which was conducted on the female fencing juniors at Port Fouad Sports Club under (17) years old and the (20) juniors. The results of the program applied to the research sample resulted in a significant improvement in the level of coordination abilities (the ability to coordinate motor coordination, the ability to perform accurately, the ability to change direction, the ability to connect movement) and the level of speed of performance of foot movements for the female fencing juniors under 17 years. year, and the proposed training program applied to the research sample led to a significant improvement in the level of both the combinatorial abilities and the level of speed of performance of the footwork under study for female fencing juniors under 17 years of age, and the results of the pre- and post-measurement showed significant differences in the level of both the combinatorial abilities and the level of speed of performance of the footwork, in favor of the post-measurement (Ali Haddou, 2022, p. 233). The research aims to identify the level of some physical and motor abilities and intelligence among students aged (9-10) years, and to know the effect of some interactive harmonic exercises on the level of some physical and motor abilities and on the level of intelligence among students aged (9-10) years. As for the research hypotheses, there are no statistically significant differences between the pre- and post-tests of the control and experimental groups in some physical and motor abilities and intelligence among students aged (9-10) years. There were statistically significant differences in the post-tests between the control and experimental groups in some physical and motor abilities and intelligence among students aged (9-10) years.

Method and tools:

The researchers adopted the experimental method“ ,which is based on direct and realistic dealing with various phenomena and is based on two basic pillars: observation and experimentation of all kinds ”(Taha Muhammad, 2022, p. 65), so the researchers used the experimental method with control and experimental groups with a pre- and post-test, as it is one of the most appropriate scientific methods to solve the research problem. The research sample was chosen intentionally, consisting of students from the Lebanon Mixed Primary School affiliated with the Second Rusafa Education Directorate in Baghdad Governorate for the academic year 2023-2024 AD, aged (9-10) years, and numbering (30) students, after female students were excluded. Through lottery, one classroom was identified as a control group, numbering (15) students, while the other class was identified as an experimental group, numbering (15) students. (6) students were selected as a sample for the exploratory experiment, and the specifications of the research sample were fixed in the variables of height, weight, and age, as in Table (1). It is noted that the value of the skewness coefficient is less than (+1), which indicates the homogeneity of the sample in the mentioned variables.

Table (1) Homogeneity of the sample members in the variables of height, weight, and age

Torsion coefficient	The mediator	Standard deviation	Arithmetic mean	Variables	T
0.833	10	2.440	10.678	the age	1
0.280	50	3.462	50.324	the weight	2
0.329	150	3.484	150.383	Total length	3

The researchers used means of collecting information, devices and tools represented by Arab and foreign sources, observation and experimentation, an auxiliary work team, a medical scale to measure weight, an electronic stopwatch (2), a ruler, a tape to measure the total length, wooden bars, chairs (2), rope, chalk, and a whistle. The tests used are:

- Running test (8) (Al-Khudari, 2022, page 17).
- Sitting from lying down test (Sharif and Abu Bakr, 2021, page 5).

- Test of successive jumps in place 10 seconds (Al-Khudari, 2022, page 17).
- Test of bending the torso forward from standing (Al-Khudari, 2022, page 17).
- Rebound running test (Al-Khudari, 2022, page 17).
- Raven Intelligence Test (Mustafa, 2022, p. 1).

The researchers conducted the exploratory experiment on (6) students from the Lebanon Mixed Primary School, aged (9-10) years, in order to extract the scientific foundations of the tests, which are represented by honesty, consistency, and objectivity, despite their scientific weight and their presence in the sources, and they have previously been applied to the Iraqi environment, and as a result of distributing questionnaire forms to experts and specialists to seek their opinions in determining the most important tests appropriate for measuring physical and motor abilities and the level of intelligence, according to What is mentioned (Thaer Daoud 2020 AD) is“ ,The content validity aims to know the extent to which the test or scale represents aspects of the trait, characteristic, or period to be measured, and whether the test or scale measures a specific aspect of this phenomenon or measures it entirely ”(Al-Qaisi Th., 2020, p. 25). Thus, the researchers obtained the content validity of all tests nominated for application, and the reliability coefficient of the tests was also extracted. Using the (test and retest) method, by conducting the exploratory experiment on (6) students from Lebanon Primary School, and using the simple correlation coefficient (Pearson) between the scores of the first and second measurements, it was concluded that all the tests had high reliability because all of their calculated values were at a significant level) .**Say** (It is smaller than the value of the approved significance level (0.05) as in Table (2), and in order to identify the objectivity of the tests, the value of the simple correlation coefficient (Pearson) was calculated between the scores of the first and second judgments, and it was concluded that all tests are of high objectivity due to the significance level values being) **Say** (She was It is smaller than the value of the approved significance level (0.05) as in Table.(2)

Table (2) Validity, reliability and objectivity of the tests nominated for application

Connotation	Objectivity	Connotation	Consistency	Tests	T
spiritual	0.912	spiritual	0.821	Running figure 8	1
spiritual	0.913	spiritual	0.922	Sitting from lying down	2

spiritual	0.845	spiritual	0.805	Consecutive jumps in place 10 seconds	3
spiritual	0.856	spiritual	0.837	Bend the torso forward from standing	4
spiritual	0.842	spiritual	0.796	Bounce running	5
spiritual	0.866	spiritual	0.834	Raven's intelligence test	6

Then the two researchers conducted the pre-tests before starting to implement the interactive harmonic exercises for all tests of physical and motor abilities and on members of the research sample from the two groups (experimental and control) over two days. The researchers conducted the pre-tests on the (experimental group), represented by the fourth grade, Division (A), on Sunday, 10/5/2023, at nine o'clock in the morning, in the school yard. As for the sample (the control group), represented by the fourth grade, Division (B), on Sunday. Monday, 10/6/2023, and also in the school yard. Before starting the statistical treatments, the researcher conducted a (normal distribution) test in the) **Shapiro-Wilk**) (Al-Qaisi Th., 2020, p. 29 (For the tests (running in shape (8), sitting from lying down, successive jumps in place for 10 seconds, bending the torso forward from standing, bouncing running, and Raven for intelligence), the values of which were in the test) **Shapiro-Wilk** (respectively (0.784, 0.811, 0.759, 0.765, 0.790, 0.810) and their significance level values) **Say** (They were respectively (0.067, 0.084, 0.069, 0.073, 0.066, 0.072), and given that all significance level values are) **Say** (For all tests, it is greater than the approved significance level of (0.05), which indicates that it has a normal distribution. Therefore, researchers must use parametric statistics. Therefore, the t-test was used for independent, uncorrelated, and equal samples. Thus, the sample is considered equal in all tests, and the number is shown in Table .(3)

Table 3: Test values in the test) Shapiro-Wilk(

T	Tests	Shapiro-Wilk		
		Statistic	Df	Say
1	Running figure 8	0.784	30	0.067
2	Sitting from lying down	0.811	30	0.084
3	Consecutive jumps in place 10 seconds	0.759	30	0.069
4	Bend the torso forward from standing	0.765	30	0.073
5	Bounce running	0.790	30	0.066
6	Raven's intelligence test	0.810	30	0.072

Then the researchers calculated the parity between the two groups (the control and the experimental) in all tests of physical and motor abilities and in the intelligence test using the t-test for independent and uncorrelated samples equal in number, and it was concluded that the two groups (the control and the experimental) were equivalent in all tests and in the level of intelligence due to the fact that all the values of the calculated level of significance were) **Say** (It is greater than the value of the approved significance level of (0.05), which indicates the equality of the two samples, as shown in Table.(4)

Table (4) The arithmetic means, standard deviations, and T-value calculated for the pre-test and for the control and experimental groups in the tests of physical and motor abilities and in the Raven's intelligence test

T	Variables	empiricism		Female officer		T	Say	Connotation
		Q	A	Q	A			
1	Running figure 8	11.100	1.028	11.266	0.944	0.654	0.061	Insignificant
2	Sitting from lying down	9.433	1.006	9.233	0.817	0.845	0.211	Insignificant
3	Consecutive jumps in place 10 seconds	9.600	1.328	9.866	0.973	0.887	0.152	Insignificant
4	Bend the torso forward from standing	3.700	1.859	3.800	1.730	0.216	0.312	Insignificant
5	Bounce running	5.890	0.479	5.976	0.523	0.669	0.230	Insignificant
6	Raven's intelligence test	12.33	5.148	13.200	5.671	0.620	0.131	Insignificant

When implementing the main experiment, the researchers developed a plan to implement the proposed interactive harmonic exercises curriculum within the proposed teaching plan, as shown in Table (5), and the researchers adhered to the main lines of the plan as follows: (Preparatory Section) (10) minutes by (2) min For the introduction, preparing the class, and

recording absences, and (8) minutes for the warm-up and physical exercises, since this section aims to prepare the body. The (main section) is (30) minutes, which includes (7) minutes for the educational activity, and the remaining (23) minutes is for the applied activity, as the section aims to improve some motor abilities and improve intelligence through some of the suggested interactive harmonic exercises that were prepared and designed to suit the desires and inclinations of students according to this age stage. And (the final section) (5) minutes. The goal of this section is to calm down and leave .

Table (5): Teaching unit sections

Degrees in the graph	Time within (16) units	Time during the unit	Teaching unit sections	
80	160	10d	Warm up	Preparatory Department
56	112	7d	Educational activity	Main section
184	368	23d	Applied activity	
40	80	5d	Concluding section	
360	720	45minutes	the total	

The lesson plan included (2) teaching plans per week and an average of (8) plans per month. The time for physical education lessons in primary schools is (45) minutes.

The researchers conducted the post-tests after implementing the proposed interactive combinatorial exercises curriculum for the experimental group on 12/5/2023 for the experimental group and on 12/6/2023 for the control group. It was taken into consideration that the post-tests would be conducted in the same conditions used when implementing the pre-tests inside the school in terms of time, place, tools and necessary equipment, and with the help of the same assistant work team in the pre-test. The researchers used the ready-made program))**IBM SPSS Ver25** To perform statistical treatments and extract the values of the arithmetic mean, standard deviation,

median, skewness coefficient, test **T test** For non-independent interdependent groups, test **T test** For independent, unrelated groups, Pearson's simple correlation coefficient test) **Shapiro-Wilk.** (

Results :

Table (6) shows the arithmetic means, standard deviations, and T-value calculated for the pre- and post-tests of the experimental group in the tests of physical and motor abilities and the Raven's intelligence test.

T	Variables	Pretest		Posttest		MF	2F	T	p	Annotation
		Q	A	Q	A					
1	Running figure 8	.100	.028	.433	.678	.666	.246	.774	.000	spiritual
2	Sitting from lying down	.433	.006	.100	.125	.66 -	.250	.660	.000	spiritual
3	Consecutive jumps in place 10 seconds	.600	.328	.733	.529	.13 -	.406	.791	.001	spiritual
4	Bend the torso forward from standing	.700	.359	.166	.877	.46-	.493	.975	.000	spiritual
5	Bounce running	.890	.479	.243	.897	.646	.154	.189	.012	spiritual

6	Raven's intelligence test	.333	.671	.966	.872	.63 -	.489	.124	.000	spiritual
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Table (7) Arithmetic means, standard deviations, and T-value calculated for the pre- and post-tests for the control group in physical and motor abilities tests and the Raven's intelligence test

T	Variables	Pretest		Posttest		MF	H ² F	T	Sig	Connotation
		Q	A	Q	A					
1	unning figure 8	1.266	.944	0.766	.773	.500	.190	.628	.010	spiritual
2	itting from lying down	0.233	.817	0.466	.860	.23 -	.078	.971	.000	spiritual
3	onsecutive jumps in lace 10 seconds	0.866	.973	0.900	.061	.03 -	.089	.372	.064	nsignificant
4	end the torso forward om standing	3.800	.730	4.266	.574	.46 -	.228	.046	.000	spiritual

5	ounce running	5.976	.523	5.623	.609	.353	.090	.907	.002	spiritual
6	aven's intelligence test	3.200	.148	3.100	.333	.100	.394	.072	.211	nsignificant

Table (8) Arithmetic means, standard deviations, and T-value calculated for the posttest for the experimental and control groups in the physical and motor abilities tests and the Raven's intelligence test

Connotation	Say	T	The female officer		empiricism		Variables	T
			A	Q	A	Q		
spiritual	0.000	7.094	0.773	10.766	0.678	9.433	Running figure 8	1
spiritual	0.000	2.449	0.860	9.466	1.125	10.100	Sitting from lying down	2
spiritual	0.000	2.451	1.061	9.900	1.529	10.733	Consecutive jumps in place 10 seconds	3
spiritual	0.000	2.012	1.574	4.266	1.877	5.166	Bend the torso forward from standing	4

spiritual	0.000	1.918	0.609	5.623	0.897	5.243	Bounce running	5
spiritual	0.000	6.471	4.333	13.100	3.872	19.966	Raven's intelligence test	6

Discussion:

By observing Table (6), it is clear that the result is consistent with what the researchers expected in their first hypothesis, as the results showed that there were statistically significant differences between the pre- and post-measurements of the experimental group and in favor of the post-measurement in all tests of physical and motor abilities and in the level of intelligence as well. The researchers attribute the reason for this to the positive effect of the experimental group's students' use of the interactive harmonic exercises curriculum proposed and developed by the researchers in the physical education lesson, and the results shown in Table (7) also showed the presence of statistically significant differences between the pre- and post-measurements of the control group and in favor of the post-measurement in all tests of physical and motor abilities except for the tests (successive jumps in place for 10 seconds, and the Raven test of intelligence). The researchers attribute the reason for this to the correct use of traditional exercises and their diversification in the physical education lesson, which added a significant effect between the pre- and post-tests in the tests (running figure 8, and sitting from Lying down, and bending the torso forward from standing) while the lack of focus on exercises to develop the level of intelligence may have led to weakness in my tests (successive jumps in place for 10 seconds, and the Raven's intelligence test). The results shown in Table (8) also indicate that there are statistically significant differences in the post-measurements between the experimental and control groups and in favor of the experimental group in all tests of physical and motor abilities and the Raven's intelligence test. The researchers believe that this is the reason for the group's students' superiority. The experimental study on the students of the control group is due to the contributions of the exercises of the proposed curriculum, which depends on the use of interactive combinatorial exercises, their quality, prepared and implemented, and applied according to their scientific foundations, which helped greatly in raising the students' abilities by giving them freedom of movement in different, diverse and interesting fields and improving their physical and motor abilities and their level of intelligence. This result reached by the researchers is consistent with what was indicated by (Makarem Helmy et al. 2000) "that the use of exercises and games in a physical education lesson, it leads to the activation of the nervous and physical system. It also plays an influential role in developing the psychological aspects of accepting the parts of the lesson with happiness and joy, which generates motivation and inclination towards practicing sports" (Abu Hajra et al., 2000, p. 125). It also agrees with what was indicated by (Abdulaziz Mustafa 1995) that "many researchers in the sports field have emphasized the importance of games and motor exercises in order to

improve students' abilities, and they explained that practicing motor activity works as a means of physical development as well as developing basic movements and skills "(Mustafa A., 1995, p. 29), and it agrees with what was indicated by (Schreiner **Schreiner** 2009) AD" (There are important points when training harmonic abilities, which are diversity, accuracy, error correction, focus on performance, motivation for the buds, and the appropriateness of the exercises given to the dental stage, as well as control during the units on controlling performance, as well as good rhythm and motor balance in different situations) "Schreiner, 2009, p. 221, (It also agrees with what was stated by (Khair al-Din Ali and Izzat Mahmoud, 1985), quoted by (Ozolin)" :Special exercises are those that aim to develop the physical and psychological qualities associated with the chosen type of sporting activity, and also aim to teach the technique associated with that activity" (Owais and Kashif, 1985, p. 90). It also agrees with what was stated by (Ellen Wadie, 1996)" ,that preliminary games seek to achieve many goals" ".Educational agility is characterized by its multiple and varied situations when used. By practicing it, children acquire physical, cognitive, and skill abilities in proportion to their stages of development and the individual differences between them "(Faraj, 1996, p. 395), and it agrees with what was stated by (Amr Hamza et al. 2016 AD)" that interactive agility is the most specialized ability of agility, as it is what is most often used to describe the motor quality of agility that appears in Sports activities) "Hamza, Nour El-Din, and Abdel Samie, 2016, p. 26).

The researchers also believe that interactive harmonic exercises of all kinds affect morals, as through practicing these exercises students acquire many moral values and strengthen them. They also work to develop the spirit of cooperation and help in obedience, in addition to acquiring some sound social and moral habits such as gaining order, tolerance, cooperation, courage, and the level of intelligence that students acquire through practicing harmonic exercises during a physical education lesson, and this is consistent with what Kamal pointed out. Darwish and Amin Al-Khouli, 1990 AD" (Play and recreational activities are an important aspect of the development of human behavior during the various stages of growth, as the individual learns through play more than any other activity "(Darwish and Al-Khouli, 1990, p. 87). The results reached by the researchers are also consistent with what was stated by (Kurt Meinel, 1987 AD) that" the level of endurance among children between the ages of seven and ten years It requires a rapid stage of growth and development where the child is naturally able to run long distances and has a good ability to rest and have great endurance) "Meinel, 1987, pp. 248-265)

The researchers also attribute the reason for the improvement of the experimental group to the effectiveness of the interactive harmonic exercises curriculum, which through a well-organized lesson contributed to putting the students in a state of constant movement, that is, giving the students the freedom to work according to their abilities and talents, which made them rely on themselves in the work or motor task assigned to them, which motivated them to exert their maximum energy in the lesson. The reason for the improvement is also due to the number of repetitions when applying the harmonic physical exercises, which gave the students the appropriate time to practice and repeat, and this is consistent with what he indicated) .**Schmidt ,Craig 2000** (م

“Teachers or trainers should encourage learners to perform as many exercise attempts as possible ”
(Schmidt & Craig, 2000)

Conclusions:

- .1The use of interactive harmonic exercises within a physical education lesson has a positive impact on the variables of the study, as the results showed that there were statistically significant differences between the pre- and post-measurements of the experimental group, in favor of the post-measurement, in all physical and motor ability tests, and in the students ' intelligence level.
- .2Using traditional teaching methods, the results showed that there were statistically significant differences between the pre- and post-measurements of the control group in all variables of the study except for the two tests (successive jumps in place 10 seconds, and the Raven's intelligence test), which indicates the presence of some kind of defect and shortcomings in some components of the traditional teaching curriculum.

Recommendations:

- .1Paying attention to interactive harmonic exercises within the physical education lesson because of their great importance in improving physical and motor abilities and developing the level of intelligence.
- .2When developing motor activity programs, it must include different types of interactive combinatorial exercises in order to develop all aspects of students 'motor and cognitive development .
- .3Further studies should be conducted to identify the effect of interactive harmonic exercises on samples that were not covered in the current study, in terms of age and for both genders.

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The relationship of motor response-ability to the level of skill performance for the female futsal players of Al-Zawraa Sports club

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Abstract

The current study dealt with identifying the type of relationship between two variables, which are the motor response ability and the skill performance of the players of the Al-Zawraa Futsal Club, which is participating in the Iraqi Premier Futsal League for Women in the (2022-2023) season. The researchers used the descriptive approach in a comparative manner to suit the nature of the research, as they conducted a test of the two variables. After ensuring the validity and suitability of the tests for the research sample by extracting the scientific foundations for the tests that were applied to (70 female athletes), while the main experimental trial for the research sample included (16) female players who performed the motor response ability test with the skill performance test, and after extracting and processing the results, it was found that there A positive and reciprocal relationship between the two variables, as skill performance is affected by the level of combinatorial abilities.

Keywords: coordination, quick response ability, skills performance, futsal.

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Introduction

Football is the most important game in our contemporary and modern times, as it has received great and noticeable attention from specialists and workers in the field of this game, in addition to the diversity of games derived from football, such as football tennis, street football (3 vs. 3), in addition to indoor football, which enjoys widespread popularity and has developed significantly as a result of the use of modern methods and foundations for learning and diversity in training and education methods and methods according to modern scientific programs that have a clear impact on developing the level of players' performance. The use of modern methods and techniques and appropriate exercises to develop this game is one of the most important aspects on which the process of progress and advancement is based, in addition to the fact that knowing and analyzing the characteristics and aspects that are to be developed is one of the basic necessities to obtain an effective impact in the game of indoor football, which is one of the games with many requirements and high levels. (Easa et al., 2022)

Knowing the level of abilities (physical, motor and mental) in addition to the skill levels of the players is considered a basic necessity for every coach, specialist and researcher in indoor football in order to know the starting point on which the training programs are built. (Kazim et al., 2019)

The coordination abilities are (T. S. S. Ibrahim 2022) They are psychological and physical conditions for controlling skillful behaviors, or they are qualifications and conditions that lead to reflecting the quality of the sensorimotor system and the extent of its quality or lack thereof, and There is a group of coordination abilities, and one of these abilities is the ability to quickly respond to movement, which is explained by Mathews (Matthews, 2012, p. 126) It is the ability to perform movements quickly after hearing or seeing signals (audio, visual) with the aim of completing a motor task as quickly as possible, and it's explained by Asaad and Samer (Asaad Lazem, 2023, p. 49) & (Shukur et al., 2022) It is the player's ability to link more than one skill together with a high level of fluidity, accuracy and speed during performance. Also, identifying the relationships between the player's physical, motor and skill abilities has a positive impact on developing training programs. (Salman et al., 2022) The researchers reviewed a number of previous studies that benefited and enriched the researchers and the research. The study concluded that: (Al-Din, 2021, pages 134-158) The quality of technical and tactical performance of football buds depends to a large extent on their coordination abilities. (Salman et al., 2022) & (T. S. S. Ibrahim 2022) and the study (Mahdi Fadel Mohsen, Sadiq Jaafar Sadiq, 2023, pages 272-286) that showed the effectiveness of developing the coordination abilities of the research sample using an educational sample field, in addition to the fact that the lack of leadership exercises affects the players' performance. 2020). The current study aims to identify the type of relationship between motor response ability and skill performance of female futsal players. From the previous studies presented, the importance of the research for the researchers was shown in knowing the type of relationship between motor response ability and skill performance of female futsal players. (Mondil et al., 2023)

Method and tools

The method is the means or path that the researcher takes to solve the research problem, and the nature of the problem imposes a specific method that the researcher uses to reach the truth (S. S. Ibrahim, Ahmed, and Shehab 2024). Therefore, the researchers used the descriptive approach to study the correlational relationships as it is an appropriate approach to achieve the objectives and its suitability to the nature of the study. The research sample was chosen intentionally, that, that part of the community that is carefully selected according to sound scientific rules and foundations, so that it correctly represents the research community (S. S. Ibrahim 2021).

The research sample consisted of Al-Zawraa Sports Club players for the women's futsal team for the sports season (2022-2023), numbering (18) players, as two players were excluded for participating in the exploratory experiment. Table (1) shows the size of the research sample and the exploratory experiment and their percentages (Haider Talb Jasim, Hantosh, and Ibrahim 2021).

Table (1)
The sample of the study

Sample	Details	Percent
The Society	The clubs which are participating in Iraqi Futsal women's league 2022-2023 (8) Clubs	%100
Sample of this study	AL Zawraa SC	%11.42
Exploratory experiment	Air Force SC	%1.42

The researchers extracted the scientific bases for the tests, as the experiment of verifying the validity of the test and extracting the scientific bases was applied to (70) female players from the Iraqi league. (Ali, Hameed, and Ibrahim 2020). The validity was extracted through the apparent validity of the tests by distributing the test form to the specialized experts to know that the test measures the characteristic or goal for which it was set. In addition to that, the researchers extracted the discriminating power of the test, and Table (2) shows the discriminating power of the research tests (Easa, Shihab, and Kahdim 2022).

Table (2)
Discriminatory ability of research tests

No	Test	Upper		Lower		t	sig	sign
		mean	Std. Deviation	mean	Std. Deviation			
1	Response Time	0.108	1.008	0.065	0.367	-22.057	0.000	positive
2	Skill performance	0.109	0.854	0.081	0.46	12.579	0.000	positive

df (36)

While the researchers extracted the reliability coefficient for the tests through testing and retesting, as reliability is one of the most important scientific foundations on which a good test is based (Talib Jasim, Hayder Hussein, and Saad Ibrahim 2022), and the (Salman, 2018, page 187) pointed to The stability of the test is the accuracy of the test in measurement and observation and its lack of contradiction with itself, as well as its ability to give the same or close results Results if it is re-applied to the same individuals and under similar conditions. (Asliwa, Ibrahim, and Shehab 2024)

Table (3) shows the stability coefficient for compatibility and skill tests (Alkazaly and Altay 2023; Lect Samer Saad Ibrahim, Salam Hantosh, and Talb Jasim n.d.)

Table (3)
Correlations of coordination & skills performance test

N	Tests	Correlations	sig	Status
1	Response Time	0.599**	0.000	positive
2	Skills performance	0.577**	0.000	positive

Confidence INTERVAL Percentage 95%, df)68=

While the objectivity of the two tests is highly objective, the pilot experiment was conducted on Friday 1/6/2023. While the motor response ability and skill performance tests for the study variables were conducted on Friday 1/27/2023. In the Women's Hall at the Ministry of Youth and Sports, all research procedures extended for the period from 1/1/2023. To 1/7/2023. The main experiment tests were as follows:

- Response Time Test (Zayer, The effect of exercises using an assistive device in developing the speed of motor response and scoring accuracy among young football players, 2014, p. 45)
- Skills Performance Test (Al-Matalab, 2016, p. 78).

The researcher pay fully attention to keep the environment of the test under control(Ali, Hameed, and Ibrahim 2020).

Results

The researchers extracted the research results after collecting the data through tests and processing them statistically using the statistical package (Spss), as shown in the following tables:

Table (4)
Shows the statistics of the tests

N	Tests	measure	mean	Std. Deviation	Skewness	Upper	Lower
1	Response Time	second	0.651	0.199	0.156	0.990	0.340
2	Skills performance	Point + Second	1.039	0.134	0.736	1.320	0.830

Confidence INTERVAL Percentage 95%

Table (5)
Correlations

N	Tests	Correlations	sig	Status
1	Response Time	*0.565	0.022	positive

Confidence INTERVAL Percentage 95%

Discussion

From Table (4), we notice that the distribution of the research sample is a normal distribution because the level of skewness is within the limits of (± 1), in addition to the fact that the sample is homogeneous because it plays in the same category and the same team, while in this study we do not need to perform the equivalence between the variables (motor response and skill performance) because we aspire to identify the existence of the relationship or not.(Hayder Talib Jasim, Abed, and Ibrahim 2023)

There is a significant correlation between the ability to quickly respond to motor movements and skill performance, (Obaid et al., 2022) as shown in the results in Table (5), which show a significance level of (0.022), which is less than the level of (0.05), and this explains the significance of the correlation(S. S. Ibrahim 2021).

The researchers attribute the existence of a correlation between the ability to respond to motor skills and skill performance to the fact that the ability to respond to motor skills is one of the harmonious abilities that positively affects skill performance, and it confirmed by (Witkowski, etal, 2021, pp. 15-25) That the compatibility capabilities are one of the most important main pillars of skill performance, as they form a common denominator with other elements to contribute to the player reaching the highest athletic level according to his physical capabilities (S. Ibrahim, Asleawa, and Farhan 2024) Creative people are characterized by a high degree of coordination. The more a futsal player has a high level of coordination abilities, of which motor response is one, the better his ability to learn and perform different playing skills such as (dribbling, handling, scoring and dribbling), since these skills require a degree of neuromuscular coordination and coordination specific to each skill.(S. S. Ibrahim, Ahmed, and Shehab 2024) and it's confirmed by (Naji Kadhim, Ali Saad, Samer Saad, 2020, pp. 5927-5934) However, basic skills are developed through various exercises, one of which is coordination exercises and Samer Saad Agreed with this opinion (S. S. Ibrahim 2021) and last the Movement or skill is related to the individual's motor, physical and coordination abilities and all of his internal systems, and plays an important role in performing skills.(Hayder Talib Jasim, Hussein, and Ibrahim 2021)

EXTENSION (1) Research Tests

1- Response Time Test

Purpose: Measure the Response time

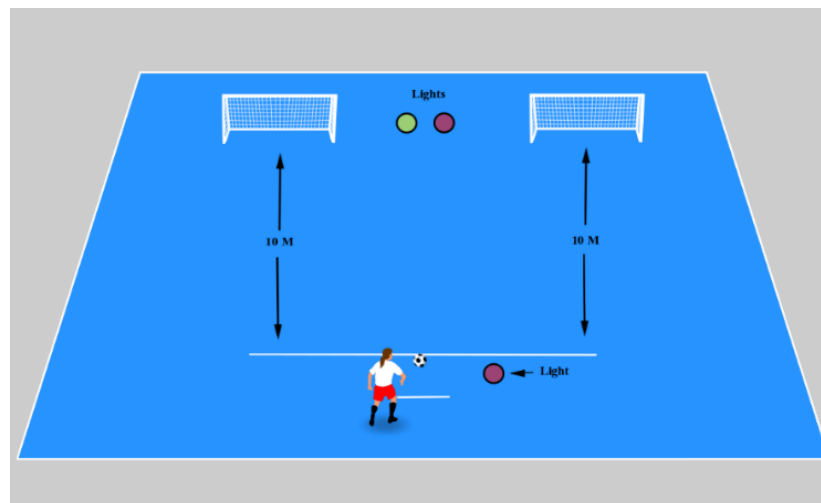
Tools:

- Balls
- Small Goals
- Camira Video 300/sec
- Plazepod
- Playground
-

Performance:

The player stands (50) cm away from the ball and in front of the light device. On both sides of the device are small targets measuring (120 cm) in width and (75 cm) in height. The player kicks the ball towards the small target which is (10 m) away from the location of the ball in the direction determined by the light (i.e. if the right light is on, the player kicks the ball towards the right target and vice versa). Each player is given three attempts and the best attempt is counted. A video camera is placed on the side for the purpose of measuring the time from the moment the stimulus appears until the moment the ball leaves the player's foot.

Score: The time for a correct response is calculated from the moment the stimulus appears until the moment the ball leaves the player's foot.



Figer (1)
Showing how to perform the test

2- Skills Performance Test

Purpose: to measure the accuracy of speed of control and dribble and shooting the ball.

Tools:

- Futsal balls
- Whistle
- Colored Rope
- Saquar 1x1m
- Small goal 75x50cm
- Small area 1x1m for passing

Performance:

The player stands behind the designated suppression zone line, which is 8 m away from the ball launcher. After giving the start signal, the ball launcher throws the ball (ground crawling ball) towards the suppression zone. The player advances into the suppression zone, trying to stop the ball (suppression) by muting the ball with the bottom of the foot (sole), then changes direction to run with the ball (roll) by pulling the ball with the bottom of the foot (sole), until he reaches the handling zone (1) to handle the ball towards the small target, trying to hit the middle part of the target. All testers perform the first attempt in succession, then move to perform the second and third attempts through the handling zones (2) and (3) in succession for all testers and in the same manner performed in the first attempt.

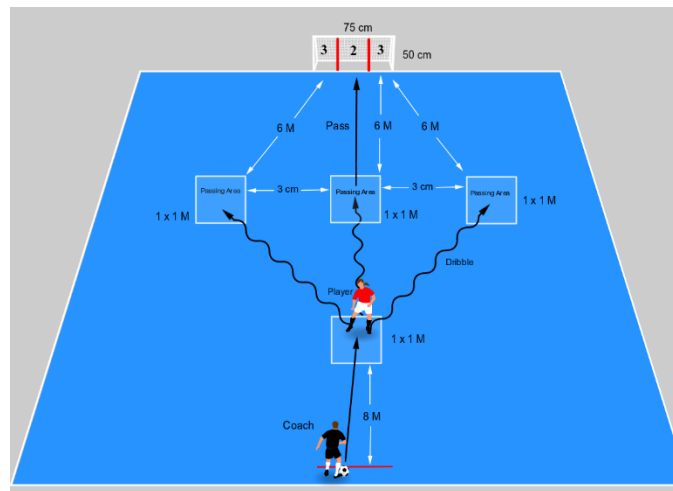
Terms & conditions

- The ball movement must be stopped within the designated area for suppression.
- The ball must be stopped by muting the ball under the foot (sole).
- The tester must perform (rolling) by pulling the ball under the foot (sole).
- If the ball goes out of the tester's control during (rolling), the tester will be given (zero) points.
- The handling skill must be performed within the designated areas for handling and according to the sequence (1-2-3).
- The tester must perform the test as quickly as possible.

Score:

- The player is given (three attempts).
- The player is given (one mark) for successful control.
- The player is given (zero) marks for failed control.
- The player is given (one mark) for successful dribble.
- The player is given (zero) marks if the ball goes out of the player's control during dribbling.
- The player is given (three marks) when hitting the middle part of the goal.
- The player is given (two marks) when hitting one of the outer parts of the goal.
- The player is given (one mark) for the handling in which the ball touches one of the posts or the crossbar.
- The player is given (zero) marks for the failed try.

- In terms of accuracy, the maximum accuracy marks are (15) marks (3) of which are for controlling, (3) for dribbling, and (9) for shooting.
- In terms of time, it is extracted from the digital camera film through the (Kinovia) program placed on the computer, where it is calculated in (1/1000) of a second.
- Unit of measurement (degrees/second).



Figer (2)
Showing how to perform the test

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A comparative study in time management between track and field sports players and volleyball players

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Abstract

The aim of the research was to study the ability of track and field players and volleyball players to manage time and to compare time management skills between volleyball players and track and field players. The descriptive approach was used, and the sample included 10 track and field players and 15 volleyball players. Merrill Douglas's time management questionnaire was approved after verifying its validity and reliability. The data was statistically analyzed using the arithmetic mean, standard deviation, hypothetical mean, and t-test. The results showed the weak ability of track and field players and volleyball players to manage time. The researcher recommended organizing educational courses to improve the players' time management skills, enhancing material and moral incentives, while adhering to the training dates specified by the coaches, and conducting studies on time management among coaches and referees .

Keywords: track and field sports players, volleyball players.

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Introduction

The topic of time management is relatively new in management literature, as interest in this comprehensive and well-known concept began in the late 1950s and early 1960s. The interest of management scholars in it has increased due to its great importance in light of the rapid progress witnessed in the management of organizations, the diversity of their activities, the changing conditions of their environment, the ambition of their goals, and the increasing obstacles surrounding them (Fattah, 1992, 2). Nations are making great strides towards development and improvement in various aspects of life, and they cannot be classified among first, second, or third world countries except through their ability to achieve progress in a relatively short time compared to other nations. Progress means the achievements that society desires in the shortest possible period of time and at the lowest costs (Al-Qaryouti, 1985, 4).

From this standpoint, it becomes clear that time management is one of the most important processes necessary to achieve progress in sports achievements. Therefore, physical education teachers and coaches must pay attention to time management and teach it to athletes, as it is no less important than the training aspects related to giving training modules, public health, physical fitness and nutrition. This interest aims to increase players' sports awareness, which facilitates their acceptance and awareness of the correct methods of using time to reach advanced levels of sports achievement. If we are not able to manage time, we will not be able to perform exercise well with the rest of our life activities, as time management is nothing but self-management. (Kadhim, 2024)

Given the importance of time, we find that humans organize their work according to their implementation priorities in terms of time. Therefore, he determines the time required to carry out each work and sets the plans and goals that he seeks to achieve at that time, because the time that passes does not return and cannot be compensated or stored, and no modification can be made to it. Time is fixed and does not change, but the speed in completing work is what creates ample time (Time, 1987, 7).

Time is also an important factor in the development of sports activity, as sports training depends on the intensity and size of the load and rest, and the time period between repetitions indicates the intensity of the exercise. Also among the things that must be taken into account in the annual training plan is determining the number of training hours or minutes according to the degree of load, as well as calming down and rest during the exercise, between repetitions, and at the end of the exercise. Harrah also points out that through time it is possible to achieve

coordination between the various forms of training and not to cause contact during the transition from one form to another in order to obtain the full load in the allotted time) ”.Harrah, 1982, 322(

The importance of the current study appears in its treatment of time management, which is one of the basic matters in sports training, and through it it is possible to identify the ability of volleyball players and track and field players to manage and organize time and estimate their time wasters to develop appropriate solutions to ensure progress in the various aspects of training. It can also be an important theoretical foundation in the development of another research.(Kadhim, 2023)

As for the problem of the research, it is noted that there is chaos and weak commitment among players to training schedules, and the player does not know where his interest should be directed towards studying, training for the college team, or his private life, which makes the player suffer from pressure and lack of time.(Kadhim & Mousa, 2024)

Time is a global source of stress and time management is an effective way to overcome the pressures of stress. (Deaton and Cameron, 165, 2001) Excess stress, whether physical, psychological, or mental, can lead to fatigue or illness. (Al-Beik et al., 1995, 16)

Therefore, the research problem is (knowing the ability of volleyball players and track and field players to manage their time, the effects of which are reflected in their efficiency and productive ability, which reinforces the research problem. There are no previous studies that addressed this topic in the sports field, to the best of the researcher’s knowledge .Many previous studies have addressed topics similar to the research topic present These studies are :League study 2002

Measuring the ability to organize time among students at the University of Baghdad. The study aimed to build a measure of time regulation, and to identify the differences between males and females in the skill of time regulation, as well as to identify the differences between the scientific and humanitarian specializations in the skill of time regulation. The study sample consisted of (240) males and (240) females from fourth-year students at the University of Baghdad. The T-test was used to distinguish the items, and the researcher concluded that male and female university students possess a high ability to manage time. The results also showed that students with a humanitarian specialization possess a higher ability than male students. Those with academic specialization in time management, and no differences emerged between males and females in time management. (Al-Douri, 2002, 23-40)

Abu Sultana study 2001 "The skill of organizing time and academic achievement in light of some variables among students Yarmouk University" The study aimed to identify the ability of Yarmouk University students to organize and manage time and its relationship to academic achievement in light of the variable academic level and gender of the students, and to build a tool to measure the skill of time management. The study sample consisted of (407) male and female students, and the data was processed using the Pearson correlation coefficient and analysis of variance. The results showed that there was an average level of time management skill among the students, and there was a statistically significant positive correlation between the time management skill and academic achievement among fourth- and first-year students, and no statistically significant differences appeared due to the variable of the student's gender or academic level (Abu Sultana, 2001, 2-40).

And the goal of the research

-Identifying the ability of track and field players and the ability of volleyball players in time management.

- Identifying the differences between volleyball players and track and field players in time management.

Force the search to:

-Track and field players and volleyball players do not have good time management ability. .

-There are no significant differences between track and field players and volleyball players in time management.

Method and procedures

Research community:

The research community consisted of volleyball players and track and field players at the University of Mosul for the year 2024-2025.

Search sample:

Volleyball players and track and field players were chosen intentionally from the College of Physical Education as they are the most efficient sports groups at the University of Mosul. They number (18) volleyball players and (10) track and field players. (5) forms were excluded because a number of them were not completed and another number of forms were not returned, bringing

the total total to (23) forms, (14) of which are for volleyball players and (9) for track and field players.

Search tool:

The Time Management Questionnaire by Merrill Edouglass was used, which was translated and added by Dr. Abdul Bari Al-Durra. The questionnaire consists of (35) items and the response is made by choosing one of the six alternatives (always), often, sometimes, rarely, never, no, does not apply. (Al-Durra, 1985, 217) In order to use the questionnaire to identify the skill of volleyball players and track and field players in time management, the researcher took a number of procedures to ensure the possibility of relying on the tool in measuring the time management variable through the validity and reliability of the questionnaire, as follows:

Honesty: Validity

The questionnaire was subjected to apparent validity to ensure the validity of the paragraphs contained in the questionnaire and the ability of the questionnaire to measure what it was designed for. This was done by presenting the questionnaire to a number of experts specialized in educational, administrative, and sports sciences and asking each of them to express his observations on each paragraph of the questionnaire whether it was valid or invalid to identify the players' time management skill. They were also asked to express their opinions on the clarity of the paragraphs and their suitability to the sample, as well as the validity of the alternatives. It resulted in observations that caught the researcher's attention, and some paragraphs were amended and two paragraphs were deleted. The answer alternatives were also shortened to four alternatives (always, often, sometimes, rarely). The above-mentioned modifications were made after the researcher obtained an agreement rate of (77%) among the experts. Bloom indicates that the researcher must obtain an agreement rate of (75%) or more from the opinions of the arbitrators regarding this type of honesty "(Bloom et al., 1986, 126). Ebel also points out that the best way to verify apparent honesty is for a number of specialists to estimate the extent to which the items represent the trait to be measured (Ebel, 1979, 555).

Reliability

For the purpose of obtaining the reliability of the questionnaire, the researcher adopted the method of testing and re-administering the test by distributing it to a sample of (15) players (8 of whom were football players and (8) of whom were track and field players, randomly selected from the colleges of the University of Mosul. The questionnaire was re-applied to the same sample ten days later, as Adams indicates“ ,The time period between the first application of the tool and the second application should not exceed two or three weeks ”(Adams, 1969, 85). And using the Pearson correlation coefficient. It was found that the reliability coefficient is equal to (0.78), and this coefficient is considered acceptable in the general scale for evaluating the significance of the correlation (Al-Sheikh and Jaber, 1964, 63). Thus, it was possible to use the questionnaire as a tool for the current research

Search tool application:

The research tool was applied to a sample of (23) track, field, and volleyball players, and instructions were explained to them regarding how to respond to the tool's paragraphs (Appendix-1-), and the questionnaire was applied in the time period from 11/1/2024 to 1/15/2025.

- Statistical methods
- Arithmetic mean
- Standard deviation

-T-test (Al-Takriti and Al-Obaidi, 1999, 267) College of Administration and Economics College of Education College of Arts College of Science College of Engineering College of Teachers.

Results

The researcher presented and discussed the results according to the research hypotheses as follows:

First assumption:

In order to verify the first hypothesis, the arithmetic mean was extracted and compared to the hypothesized mean of the time management questionnaire, which was (82.8). A score above the hypothesized mean was considered evidence of good ability in time management, while a score

below the hypothesized mean was considered evidence of weak ability in time management. This procedure was adopted in many previous studies in this field, including the study (Al-Hamdani, 56, 1996) and the study (Al-Douri, 37, 2002), and the results showed What follows:

The arithmetic mean for track and field players was (74.75), with a standard deviation of (9.03), while the arithmetic mean for volleyball players was (76.87), with a standard deviation of (10.76), and the hypothesized mean for the scale was (82.8). When comparing the arithmetic means with the hypothesized mean, we find that the arithmetic mean is smaller than the hypothesized mean, and Table (1) shows this.

Table(1)

The arithmetic mean and standard deviation for track and field players and volleyball players

Variables	-S	+A	Hypothetical mean
Arena and field players	74.75	9,03	82,8
Volleyball players	76,87	10,76	

It is clear from Table (1) that track and field players and volleyball players do not have a good ability to manage their time, and thus the null hypothesis is accepted. The result may be attributed to the bad economic and material conditions and the high level of prices in exchange for low wages, and then the low standard of living for the players, which may affect the nature of dealing with time management. (Salman et al., 2022) Low wages for the player push him to compensate for the decrease in economic return by working in other jobs and employing fewer hours for exercise. Here, Al-Ithawi (1990) emphasized that“ working in other jobs outside of the primary job may It pushes the individual to reduce the quantity and type of activities undertaken per unit of time (Al-Ithawi, 1990, 99), and the environmental conditions that players experience as a result of wars and the economic blockade that lasted for a long period created a weak social culture, (Abdulhussein et al., 2024) which has a direct impact on the formation of the athlete’s personality and behavior. Here, Shehayeb (1976) points out that“ culture is one of the most important factors that enter into the formation of the individual’s personality and the formation of the behavior of individuals ”(Shehayeb, 1976, 286). Players - as a result of environmental

conditions - have become little interested in time management, as the environment has a major impact on the community members 'concept of the value of time, as Fattah (1992) asserts that the individual“ is only a part of the environment that carries its values and acts according to what those values dictate to him ”.Fattah, 16, 1992)and (Easa et al., 2022) and this result differed with the study of Al-Douri (2002) and the study of Abu Sultana (2001) in terms of good ability in time management.

The second hypothesis:

For the purpose of verifying the hypothesis, the t-test was applied for unrelated and unequal samples to identify the significance of the differences between the two groups, and the result was as follows: The arithmetic mean for the track and field players was (73.88) with a standard deviation of (9.34), while the arithmetic mean for the volleyball players was (75.76) with a standard deviation of (10.42), while the results of the t-test resulted in no significant differences between the track and field players. For volleyball players, the calculated T value was (0.11), which is smaller than the tabulated value of (2.08), (Kazim, M. J., Zughair, A. L. A. A., & Shihab, 2019) and Table 2 shows this.(HalahAtiyah et al., 2024)

Table(2)

The arithmetic mean, standard deviation, and T-value for track and field players And volleyball players

Variables	-S	+A	T calculated	T tabular
Arena and field players	73.88	9.34	10.42	2.08
Volleyball players	75.76	75.76		

Significant at error rate $0.05 >$ and degree of freedom(2-23)

This indicates that track and field players do not differ from volleyball players in the ability to manage time, which makes us accept the null hypothesis. This result is due to the fact that volleyball players and track and field players belong to the same environment and live under the same conditions that make them acquire similar habits and close values, (Farhan, A. F., Kadhim, M. J., & Shihap, 2016) including those related to time management. Here Al-Sabaawi (2003) points out that the individual is a social being who lives most of his life in a group or groups, so mutual

effects occur between the individual and the group, meaning that the individual It influences and is influenced by the group, (Abdulhussein et al., 2024) and through the process of social interaction, the behavior of the individual is determined and the importance of the group becomes apparent to him, as the individual acquires social values and individuals vary among themselves between keeping up with the values and not opposing them or rejecting them or not accepting them and being independent of them ”(Al-Sabaawi, 2003, 34)and (Abdulhussein & Adnan, 2024). Sports as a social system cannot be viewed independently apart from the rest of the other systems, which confirm to us the difficulty of working away from tradition, from sociality, from the family, from the class organization and the economic system. (Owais and Al-Hilali, 53,1997)

The researchers reached the following conclusions:

-The aptitude and ability of track and field players and volleyball players is weak in time management.

. -The ability of track and field players is no different from the ability of volleyball players in time management.

Recommendations:

-Conducting educational courses for track and field players and volleyball players on how to manage time.

-Increasing the material and moral incentives for players and obliging them to training times determined by the coach

-Conducting a study on time management for coaches and referees.

-Conducting a study on time management for players and other sporting events.

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The effect of weight training on muscles using Muscle and Motion applications on some types of strength for advanced boxers

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Abstract

The research aimed to identify the effect of using weight training for the working muscles using Muscle and Motion applications in some types of strength for advanced boxers, and the researchers used the experimental method by designing the control and experimental groups on a sample of (18) boxers who were divided equally into two control and experimental groups, and the researchers used the Muscle and motion applications, which consist of two applications: the Anatomy application, which is specific to identifying the working muscles in training and dissecting them, and the Strength Training application, a special application for strength training. After applying the training method for (8) weeks at a rate of (3) training units per week, the results showed statistically significant differences between the results of the post-tests of the experimental and control research sample, and the researchers attributed the superiority of the experimental group to the use of the Muscle and motion application

Keywords: application, boxing, strength, weights.

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Introduction:

Strength is the basis of motor performance. Movement does not occur unless there is strength, and the source of strength in humans is muscles, its contraction and expansion lead to movement, Muscle training is the activation of the components responsible for contraction within the muscle fibers. And strength training aims to develop the muscles that are in turn responsible for all kinds of movement. Therefore, strength training and development can only be achieved by applying resistances appropriate to the level of the targeted muscles, meaning that these resistances must be standardized and studied scientifically in order to have a positive impact on them.

Boxing is a sport that requires exceptional efforts, and that the player should be physically prepared, this requires the development of appropriate training curricula that target the working muscles, whether weak or strong in the boxer, and that the curriculum be studied and standardized in a way that is consistent with the goal of training in order to achieve the best results. Modern concepts in sports training, including the concept of using modern technology in training, constitute an inevitable matter imposed by the nature of the era in which we live, as modern technology has entered every aspect of life, leading to major changes in the lifestyle. The researchers believe that competition between countries is no longer limited to raw materials and talents - despite their great importance in the results - but has expanded to include technological capabilities in all their branches.

On the other hand, one of the modern trends in training is training the working muscles that contribute to performance, whether in the center of the body, especially the muscles of the shoulder girdle, pelvis, lower back and abdomen, or the muscles involved in motor performance, as these muscle groups form the basis on which sports exercises are based on and the basis that the athletes use to battle large training loads during preparation periods. (MEIER, QUEDNOW, & SEDLAK, 2015)

The responsibility for motor performance falls on the motor system, which consists of three systems linked to each other: the muscular system, the skeletal system and the nervous system. The motor action falls on the muscles, as they are the source of strength production, and the muscles are connected to the skeletal system by tendons to form levers that partially or completely move the body, and the functions of the muscles differ in movement, as the muscle or muscle group can be the main muscle in the motor action, in which case they are called the working muscles, or they can be muscles that contribute partially to supporting the movement, in which case they are called the supporting muscles.

The aim of the research was to identify the effect of using weight training for working muscles using Muscle and Motion applications on some types of strength for advanced boxers. Since the researchers are former boxers, they noticed that the training they had previously undergone, whether in their club or the national team, did not focus much on training working muscles. In addition, through their review of the training of current teams and clubs, they found that this problem is a common problem within the local boxing community. Most of the training represents general strength training such as push-ups, pull-ups and throws and does not aim to develop working muscles with appropriate repetitions. The main goal of working muscle training is to develop those muscles that perform a mechanical action, which in turn leads to correct and productive performance. Most of the common training in general muscle training is using body mass, while special training is focused on training with special boxing equipment such as punching bags of different weights and sizes. This made the boxers use their own strength in punching performance without increasing it, meaning that they use their own strength reserve in performing skills and in tactical performance. In other words, there is a missing stage in training, which is the stage of targeting the development of the working muscles and increasing their strength output by applying external resistance and with repetitions and intensities calculated precisely according to the literature of sports training science. This procedure, according to the researchers, will increase the specific output of performance in terms of strength.

Many researchers have studied the training of working muscles. The study titled “A training program to achieve balance in the muscle strength of the flexor and extensor muscles of the elbow joint in boxers and its effect on the speed of performing straight punches” (Zakariya, 2010) aimed to develop the speed of performing straight punches by designing a 12-week training program that works to achieve balance in the muscle strength of the flexor and extensor muscles of the elbow joint and to know the effect of this on the speed of the reaction movement and the speed of the basic movement of straight punches and thus the total time of performing straight punches. As for the study titled the influence of exercises using weights in developing the distinctive power of speed and the side punch for young boxing players , (Rami, 2013) it aimed to prepare weight exercises and know their effect on developing the distinctive power of speed and the side punch for young boxing players. The exercises were used on the experimental group over a period of 10 weeks at a rate of three training units per week. The study entitled “The effect of special exercises in developing explosive power and straight punches for junior boxers” (Muneer, 2020) aimed to improve the boxers’ motor paths, control performance well, isolate the internal muscle movements and contractions that affect the boxer’s performance and abilities during training units and official matches, achieve good results, and match the result with the plan and planning.

The study entitled “The effect of using battle ropes in increasing the number of single, double, and compound punches for advanced boxers”. (Nasser & Ahmed, 2022).

The aim of the research was to identify the effect of battle rope exercises with wave and whip movements on increasing the number of punches of all types (single - pair - compound). The study, entitled "Using Information Technology in Building a Proposed Technical Administrative Training System in Boxing", aimed to build a computer system that includes a set of features, including the possibility of building integrated training curricula to develop boxers. In another study, the effect of exercises using weights in developing the distinctive power of speed and the side punch for young boxing players was discussed. The researchers concluded that the exercises used with weights showed a positive effect in developing the distinctive power of speed and the technical performance of the side punches (left and right) in boxing. (Naser, 2012)

Method and tools:

Research methodology: The researchers used the experimental method by designing the control and experimental groups to suit the nature of the research. Research community and sample: The research community consisted of advanced players from Baghdad clubs, numbering (106) boxers, selected from the boxers of the Iraqi Airways Club, numbering (22) boxers. The researchers were keen to select the sample from advanced players qualified to participate in the Iraqi championships, numbering (18) boxers, with an average age of (23) years (± 2.222), and an average training age of (7.388) (± 1.195). They were divided equally into two groups, control and experimental. The researchers took care to distribute the weights for each group equally.

Research tests

- 1 kg medicine ball throwing test with the back arm always.
- Broad jump test from a standstill.
- Arms speed strength test for 15 seconds.
- Legs speed strength test for 15 seconds.
- Trunk speed strength test: Raising the trunk from a supine position for (15) seconds with the hips fixed on the ground.

Applications used in the research.

- Anatomy: An application for identifying the muscles working in training and their dissection.
- Strength Training: An application for exercises and strength training.

It is one of the global applications that are used in most universities in the world, such as Seattle University, the University of Southern California, the University of Arizona, the University of Utah, and Hartford University, (Muscle and Motion, 2024) which indicates that it enjoys high reliability. This application is a website uploaded to the World Wide Web consisting of three separate applications as websites and connected in terms of content, which are:

The researchers used the Anatomy application to identify the muscles working in boxing skills, and using the Strength Training application, the researchers reached the developed exercises for each muscle according to the required movement path, as we notice that the application gives us many options, as after identifying the working muscles, the researchers used the section for exercises according to body parts (Exercises) and then went to the (By Model) section to choose the body part to show its exercises.



Figure (1) Strength Training Application

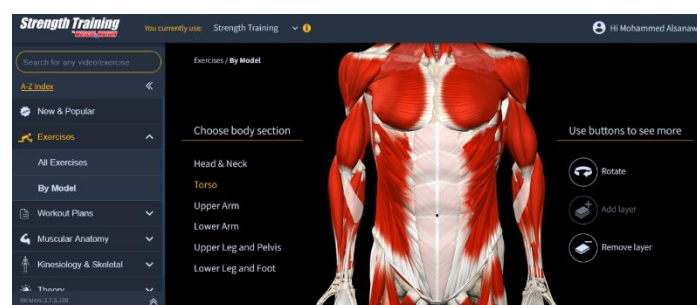


Figure (2) Strength Training - Exercises Application

After selecting the required part from the following list:

Tordo: trunk and central muscles.

Upper Arm: upper part of the upper limbs.

Lower Arm: lower part of the upper limbs.

Upper Leg and pelvis: upper part of the lower limbs and hip.

Upper Leg and Foot: lower part of the lower limbs and feet.

By referring to the required muscle, the application displays the appropriate exercises for this muscle.

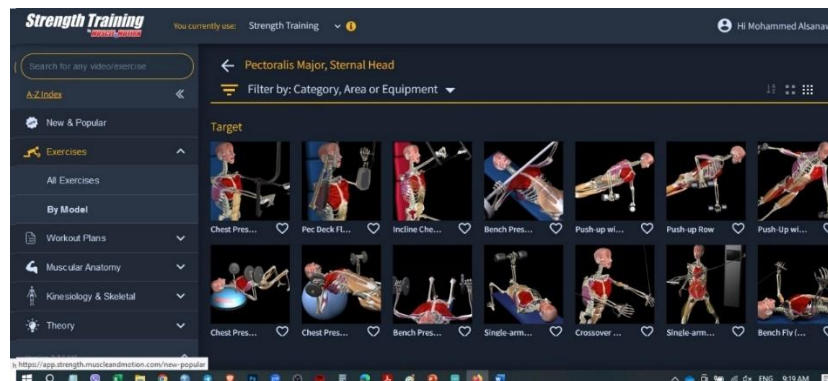


Figure (3) Strength Training - Exercises - By Model Application

Rationing in the sports training load represents the basis on which training is based, as rationing is the process of organizing training according to its limits in intensity, volume and rest periods. The researcher relied on a period of (12) training weeks at a rate of (3) training units per week, and the number of training units reached (36) training units as it is consistent with the studies that addressed this aspect in boxing fitness as in the study (Rønnestad & Others, 2012), (Dick, 2014, p. 315), (Krčmárová, 2018) and (Elliott KJ, 2002).

Through the Muscle and motion application in the experimental curricula section, the researchers applied the training curriculum for the selected working muscles, and the researchers used the gradation of training intensity.

After conducting the pre-tests, and recording the highest achievement (the maximum weight that the tester can lift once) for each individual of the three groups, this measurement represents (100%) of the highest achievement. The intensity of the load (the weight lifted) for each exercise was determined through the following equation: $\text{Intensity} = (\text{the athlete's highest achievement} \times \text{the selected intensity}) / 100$

Research results

Table (1)

Results of the arithmetic mean and standard deviation for the pre- and post-tests for the control group in the research tests

Test	Pre Test		Post Test	
	Mean	Std. Deviation	Mean	Std. Deviation
1 kg medicine ball throwing test with the back arm always -left	8.39	1.10	9.62	0.55
1 kg medicine ball throwing test with the back arm always- right	9.94	1.11	11.28	1.37
jump test from a standstill	1.93	0.07	2.04	0.13
Arms speed strength test for 15 seconds	19.33	1.80	21.56	1.51
Legs speed strength test for 15 seconds	13.44	1.24	15.33	2.00
Trunk speed strength test for 15 seconds	13.11	1.76	15.44	1.33

Table (2)

Test results of the differences test between the pre- and post-tests of the control group in the research tests

Test	Paired Differences		t-test	Sig.
	Mean	Std. Error		
1 kg medicine ball throwing test with the back arm always -left	1.23	0.47	2.59	0.03
1 kg medicine ball throwing test with the back arm always- right	1.33	0.53	2.52	0.04
jump test from a standstill	0.11	0.05	2.44	0.04
Arms speed strength test for 15 seconds	2.22	0.89	2.49	0.04
Legs speed strength test for 15 seconds	1.89	0.65	2.88	0.02
Trunk speed strength test for 15 seconds	2.33	0.62	3.74	0.01

Table (3)

Results of arithmetic mean and standard deviation for pre-tests And the post-test for the experimental group in the research tests

Test	Pre Test		Post Test	
	Mean	Std. Deviation	Mean	Std. Deviation
1 kg medicine ball throwing test with the back arm always -left	8.13	1.14	9.82	0.49
1 kg medicine ball throwing test with the back arm always- right	10.44	1.66	12.59	1.14
jump test from a standstill	2.01	0.23	2.27	0.28
Arms speed strength test for 15 seconds	20.22	3.46	23.56	2.46
Legs speed strength test for 15 seconds	13.89	0.93	17.22	1.48
Trunk speed strength test for 15 seconds	14.22	2.05	16.67	0.71

Table (4)

T-Test differences test between the pre- and post-tests of the experimental group

Test	Paired Differences		t-test	Sig.
	Mean	Std. Error		
1 kg medicine ball throwing test with the back arm always -left	1.69	0.46	3.67	0.01
1 kg medicine ball throwing test with the back arm always- right	2.15	0.26	8.21	0.00
jump test from a standstill	0.27	0.11	2.41	0.04
Arms speed strength test for 15 seconds	3.33	0.96	3.48	0.01
Legs speed strength test for 15 seconds	3.33	0.37	8.94	0.00
Trunk speed strength test for 15 seconds	2.44	0.71	3.45	0.01

Table (5)

T-Test differences test between the pre- and post-tests of the experimental group in the research tests .

Test	Pre Test		Post Test		t-Test	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
1 kg medicine ball throwing test with the back arm always -left	9.62	0.55	9.82	0.49	2.57	0.02
1 kg medicine ball throwing test with the back arm always- right	11.28	1.37	12.59	1.14	2.46	0.03
jump test from a standstill	2.04	0.13	2.27	0.28	2.46	0.03
Arms speed strength test for 15 seconds	21.56	1.51	23.56	2.46	3.37	0.00
Legs speed strength test for 15 seconds	15.33	2.00	17.22	1.48	2.73	0.01
Trunk speed strength test for 15 seconds	15.44	1.33	16.67	0.71	2.42	0.03

Discussion

The researchers used the SPSS statistical package to extract the results of the independent sample differences test. Table (2) shows the results of the t-Test differences test between the pre- and post-tests of the control research sample. In the research tests, we note that all the true significance values were less than the significance level of (0.05) and below the degree of freedom of (8). The researchers attribute this to the fact that the coach of the Iraqi Airways Club team is one of the high-level coaches and holds the highest international training certificate from the International Boxing Association (IBA), and has practical and scientific experience and knowledge, and that the approach followed in the club was prepared in a sound scientific manner. In addition, the club's training is subject to the principle of continuity, and "this principle is one of the most important principles that positively affect physical, functional and skill capabilities. (Shahata, 2006, p. 125) This is consistent with a study (Ogasawara, Yasuda, Sakamaki, Ozaki, & Abe, 2011) that indicated that the use of continuous strength training without interruption has a great positive return regardless of the type of training used, provided that it is subject to the correct training standards. Therefore, the continuity of training for this group without interruption and for long periods has achieved the availability of a broad base Of the capabilities, each of which affects the other, to have a comprehensive development, and it represents the main goal that the athlete needs for integration and moving towards a high level, as the principle of continuity in training represents one of the most influential features of modern sports training, as he indicated, he stated that "one of the basic principles in sports training is that the player continues training throughout the year without interruption, with the organization of his transition period from one year to another." (Alambaki, 2010, p. 67)

Through Table (4) which shows the results of the t-Test differences test between the pre- and post-tests of the experimental research sample, we note that all the true significance values were less than the significance level of (0.05) and below the degree of freedom (8), which indicates the existence of statistically significant differences between the pre- and post-test of the experimental research sample in the research tests. (Kadhim, 2024b)

Here, the researchers point out that the members of the experimental group were subjected to the same principle of continuity that the control group was subjected to, as they were from the same team, and had the same solid basic base of abilities that were built through continuous training without stopping, in addition to that, the use of weights according to the Muscle and Motion application, which had a positive effect on abilities, in addition to that, the exercises in this application are standardized according to the correct scientific conditions, as it is not possible to call unorganized

exercises scientifically an external load, but rather the term external load is applied to correct exercises. (Albashtawee & Alkhawaga, 2005, p. 58).

The researchers believe that one of the well-known characteristics of boxing is that the punch is not only performed with force, but the force must also be with a high degree of explosive force, and that performing punches with explosive force is nothing but a reflection of the amount of force that the boxer possesses. On the other hand, the boxer also needs strength in defensive skills in blocking the opponent's strong punches, and he also needs a kind of special strength in engagement and cohesion. Accordingly, the development that occurred among the individuals of the research sample in the post-tests was due to the use of weight exercises according to the Muscle and Motion application. (Salman et al., 2022) On another important note, the researchers attribute the results of the experimental group to the fact that the exercises were directed at targeting the working muscles, which are actually used in the game of boxing, as the use of the Muscle and Motion application, which produced the working muscles and their training directions, and the adoption of this in building the training curriculum, the weight exercises used targeted the muscles of the shoulder, hands and chest, in addition to the central muscles and leg muscles, and this combination of exercises together represents the true meaning of specialized training. Core Muscles Training also achieved stability in the center of the boxer's body. This stability and steadiness achieved in the front and back trunk muscles and other muscles associated with the center of the body contributed to increasing the ability to control the body's position in performance (Kadhim, 2024a) He believes that the stability of the trunk at the top of the pelvis and control of movement in it gives a better opportunity to produce greater strength in the rest of the muscle groups, as all the limb muscles are directly connected to the center of the body in some muscles and indirectly in other muscles, and allows control and control of movement in the final part in performing sports skills. This study also indicated that strength in the center of the body and trunk helps increase the level of control in the muscles surrounding the spine in the lumbar part, which gives stability and steadiness. (Kadhim, 2024a)

The researchers attribute the development in the researched capabilities to the fact that the researchers followed two important training principles: the principle of overload and the principle of increasing resistance. The researchers believe that these two principles represent the basis for developing muscle strength in addition to other principles. This is consistent with studies that have confirmed the use of a load greater than the muscle's capacity by certain percentages to ensure development, (Suchomel, McKeever, & Comfort, 2020) و (Fiorilli, Mariano, & Iuliano, 2020) in addition to the gradual increase in load according to the increase in strength achieved as a result of training. They are the basis on which muscle strength training is based.

The researchers attribute the results achieved for the experimental group to the fact that the researchers took into account adjusting the weights of the weights every two weeks of the application period, **Invalid source specified.** and since it is possible for a noticeable development in muscle strength to occur after 2-4 weeks of training, Matveyev is quoted as saying that the percentage of improvement in strength exceeds 20% or more in the first weeks, so that the improvement can rise to more than 50% during the first eight weeks of the training program.

It works to narrow the gap between speed and muscle strength. Moreover, these exercises employ the force of gravity to store energy in the muscles and then convert this stored energy into kinetic energy. The benefit of them lies in the fact that they require (strength-speed) which has the ability to implement maximum force in the shortest possible time. Another factor that helped in developing the elements of physical fitness for the experimental research sample is the increase in the rate of transmission of nerve impulses to the working muscles, causing rapid and strong voluntary muscle contraction resulting from the intensity of weight training.

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Building and standardizing skill tests based on visual scanning for players in the Iraqi Star League clubs

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Abstract

To the research and its importance: Tests are considered as a contributing tool for evaluation in the sports field, on which the rest of the sciences are based, the most important of which are learning and training or evaluating the level of performance and revealing errors in competition conditions and working to develop them objectively and accurately. Sight is one of the most important sources of receiving information that serves all the functions of the body by identifying the external environment and giving us information about everything that is happening around us from movements or moving objects or objects passing in front of us or the flight of balls and their speed and approach, and the individual can also determine the locations of things and their position from him, whether in terms of their proximity or distance from him, as studies and research have proven that visual training has a direct impact on the accuracy of players' performance and the speed of motor response to technical skills. Skill performance includes a motor aspect and a visual aspect. If the visual aspect does not work efficiently, this will naturally affect the accuracy and speed of motor response to skill performance. It must be noted that many visual training exercises are linked to different aspects of the game of football, including the skill aspect. Therefore, we find that all skill requirements need a deep vision and correct reading of how to employ these requirements in order to reach the appropriate space in which the player moves freely and easily, away from obstructing competitors. A good and comprehensive visual vision of the field's surroundings prepares and employs the appropriate spaces from which the player can perform the appropriate skills that help in moving in these spaces freely with a slight

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obstruction until the offensive movement is executed well. Some studies confirm that the best and most aware players are those who look at the game and do not follow or look at the ball only, as elite players always direct their face and eyes towards the players' movement quickly and continuously, and within ten seconds it reaches 7 or 10 times, so researchers and coaches must find tests similar to playing and competition situations, so the researcher resorted to designing skill tests according to the visual scanning of football players that are similar to playing during the match, and from here the importance of the study is evident in developing skill tests using the visual scanning of the field's surroundings and performing the skill during movement.

Keyword: standardizing skill, visual scanning, Iraqi Star League clubs.

Introduction

Through the researcher's experience as a former football player and his knowledge of many scientific sources and references such as similar research and studies, he did not find skill tests according to visual scanning, and because the game of football requires a visual scan of the field, which gives the player a better idea before receiving the ball about where to pass the ball to a colleague or in space or roll with it, and that the game of football requires speed in decision-making due to the number of players and pressure plans applied by the competing teams on the players who have the ball, which makes it difficult for the player to make the appropriate decision or perform the skill accurately during the pressure of competition, in addition to the rapid movement of the players and their constant change of places, which requires exploring the surroundings and scanning the field to facilitate decision-making after receiving the ball and evaluating the condition of the field and taking a proactive idea of what he will do after receiving the ball. All of this is facilitated if the player performs a visual scan, and through statistics conducted by the researcher on the number of passes in the Premier League, he found that most of the passes are not effective in building the attack quickly, and because the time factor has become a major factor in football, the visual scan process facilitates accelerating the rhythm. Designing skill tests according to visual scanning for Baghdad football club players.

Human field: - Football players of the Premier League clubs in Baghdad.

Time field:-10/11/2220-20/6/2320

Spatial field: - Club stadiums and training centers included in the research sample.

: Definition of terms

Visual scanning in football “It is the active movement of the player’s head where the player’s gaze is temporarily directed away from the ball to gather information in preparation for dealing with the ball later ”.(1)

Research Methodology:

The nature of the research problem determined the type of descriptive study using the survey method.

Research Sample:

-The researcher chose the research community represented by the players of the Premier League clubs in Baghdad Governorate, as the research community reached

-Total (263) players for the sports season (2022-2023), the research community and they were divided as follows as in Table(1) :

Table (1) sample numbers

n	Club name	Number of player	Exploratory experimentation	Number of building sample	Sample number of rationing	The excluded
1	Air Force	28		10	13	5
2	Al-Zawraa	27	15		26	1
3	ALshorta	32		10	15	7
4	ALKHARH	37	15		26	11
5	ALtalaba	36		10	18	8
6	alsanaa	33		10	13	10
7	alkahrabaa	36		10	16	10
8	alnaft	34		10	12	12
Total		263	30	60	140	63
Percentage		%100	%11.4	%22.8	53.2%	23.9%

1 -Gear Jordet and others: Scanning contextual, and Association with performance in English premier league footballers: An investigation across a season, movement science and sport psychology ,2020

Information collection methods, devices and tools used:

Information collection methods:

Methods, devices and tools used-:

The researcher used many methods, devices and tools as follows-:

Data collection methods-:

Personal interviews.

Scientific sources and references.

Tests and measurements.

Skills test results recording form according to the optical scanning of the football.

Devices and tools used-:

Stopwatches (3) type (Diamond).

Scientific calculator type (Sharp).

Computer (Pentium - 4).

Signs in the shapes of players.(12)

Light bulletins.(12)

Legal footballs.(10)

Plastic signs.(10)

Whistle.(5)

Small goals (1*1) number (6).

Research procedures:

Identification of football skills- :

The basic football skills were identified according to visual scanning, which are:

Extinguishing and handling:

1 -Test No(1) .

Test name: (Extinguishing and short handling with visual scanning).

Purpose of the test: Measuring the accuracy of short handling according to visual scanning.

Tools used: Football, number (3), human-shaped signs, number (10), light strips of one meter length, number (10), fixed on the back of the human sign, small target with dimensions (1*1 m), number.(6)

Description of performance: The tester stands behind the designated ball receiving area line (2*2) which is 10 m away from the ball thrower and (10) signs are placed 10 to 15 m away from the designated extinguishing area to the right and left of the tester and when the ball is launched from the ball thrower, the light signals placed on the backs of (4) human signs are turned on and when the ball is received by the tester, the light signals are turned off and a forward pass is made to the target placed in front of the sign which is the best option for the pass.

Performance conditions:

- The ball must be stopped in the designated area for receiving the ball.
- The pass must be performed quickly to the small target.
- The pass must be on the correct sign.

Recording method:

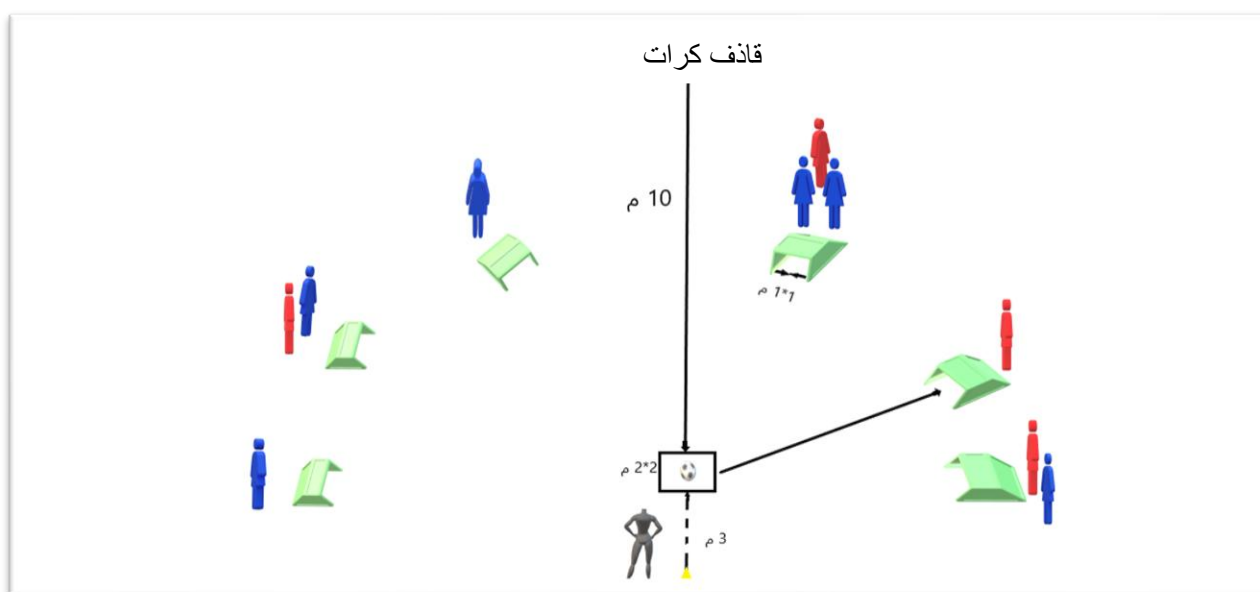
- The tester is given three balls.
- The tester is awarded (3) points if he plays the ball inside the small goal in front of the marker that was given the signal.
- The tester is awarded (2) points if he plays the ball inside the small goal after it touches one of the posts or the crossbar.
- The tester is awarded (1) points if he plays the ball outside the small goal after it touches one of the posts or the crossbar.
- The tester is awarded (zero) points if the pass is played outside the small goal.
- The tester is awarded (zero) points when performing the pass skill on the wrong

marker target.

-Points are not awarded when the ball is extinguished outside the designated extinguishing square.

Total score: 9 points.

Figure (1) shows test no. (1)



Test no. (2) :

Test name: One-touch handling with visual scanning.

Test purpose: Measuring the accuracy of direct handling with visual scanning.

Tools used: Soccer ball, (3) human-shaped markers, (10) one-meter-long light strips, (4) fixed on the back of the human marker, a small target with dimensions of (1*1 m).

Performance description: The tester stands in the designated ball-direction area (2*2) m, which is 10 m away from the ball thrower, and (10) markers are placed (10-15 m) away from the designated handling area to the right, left and in front of the tester, and between one marker and another 10 m. When the coach handles the ball, the light signals placed on the back of the human markers, (4) illuminated markers, are turned on. When the ball reaches the area designated for the player, the light signals are turned off and a forward handling is performed on the small target, which is the best option for passing.

Performance conditions:

- The ball must not be stopped in the designated area.
- The examiner must know the most appropriate character for the pass.
- The pass must be performed with one touch towards the small goal.

Scoring method:

- The examiner is given 3 attempts.

(3) -points are awarded to the examiner if he plays the ball inside the small goal.

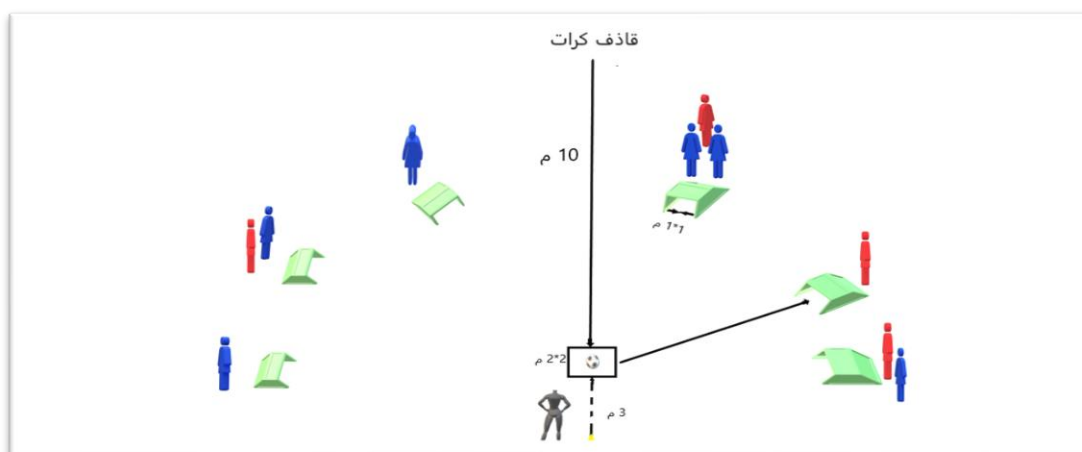
(2) -points are awarded to the examiner if he plays the ball inside the small goal after touching one of the posts or the crossbar.

(1) -points are awarded to the examiner if he plays the ball outside the small goal after touching one of the posts or the crossbar.

-(Zero) points are awarded to the examiner if the pass is played outside the small goal or towards the wrong goal

Total score: (9) points.

Figure (2) test no (2)



Scientific transactions for tests:

Test validity:

In order to extract the validity of the candidate tests under study, the researcher extracted the validity of the content.

-Content validity:

The questionnaire form for the tests under study was distributed to experts and specialists (*) in the field of football, testing and measurement, to survey their opinions on the ability of the tests to measure what they were designed for, as the test becomes valid if the experts or specialists in the field of the test agree that it measures what it was designed for.

As all experts and specialists in the field of testing, measurement and football agreed that it is valid with some modifications, the researcher took into consideration these modifications, believing in their soundness and scientific value that improves the test, in addition to that (one of the most important quality standards in testing and measurement, as it refers to the truth or accuracy with which the test measures the thing or phenomenon for which it was designed.).(1)

Table(2) The percentage of experts' agreement (content validity) for the research tests and the value of (Chi2).

N	TEST	Agree	Un e	chi- are test	statistically ificant
1	Put down and short pass a visual scanning	13	0	13	Significance
2	Pass in one touch with al scanning	13	0	13	Significance

1– Mahjoub Ibrahim Yassin Al-Mashhadani; Tests and Measurements in the Field of Physical Education and Sports Education Sciences, 1st ed., (Baghdad, Al-Mutanabbi Street, 2015). p. 69.

Reliability:

Reliability, as is known, is obtaining the same test result if it is repeated once or several times.(1)

To ensure the stability of the results extracted from the test, the researcher extracted the reliability by testing and repeating it, as the tests were applied to a sample of (30) players representing the teams (Al-Zawraa and Al-Karkh) on (25-26/1/2023) and the researcher obtained the first measurement and the tests were repeated after (7) days under the same conditions and on the same sample, to extract the reliability coefficient using the correlation coefficient (Pearson), as the results showed high reliability coefficients by observing the significance values, which are less than the significance level (0.05), which indicates the significance of the correlation, as shown in Table (3).

Table (3) shows the stability coefficient for the skill tests according to the visual scanning

Skill for the research sample and the significance values under study

	test	unit	Reliability	statistically significant
1	Put down and short pass with visual scanning	degree	0.946	0.000
2	Pass in one touch with visual scanning	degree	0.951	0.036

It means "the lack of difference between the evaluators in judging something or a specific subject" (2), In addition, it was calculated by (the correlation between the scores of two judges), who assign scores to one group of individuals at the same time. The results showed high stability coefficients by observing the significance values, which are less than the significance level (0.05), which indicates the significance of the correlation, as shown in Table (4).

1- Louay Ghanem Al-Sumaidaie and others; Statistics and Testing in the Sports Field, 1st ed., (Erbil, Directorate of Dar Al-Kutub, 2010), p. 120.

2 - Mustafa Hussein Bahi; Scientific Transactions and Application (Validity - Consistency - Objectivity - Standards), 1st ed.: (Cairo, Book Center for Publishing, 1999), p. 50.

Table(4)

Objectivity coefficient for skill tests and significance values under study

n	test	unit	Objectivity	statistically significant
1	Put down and short pass with visual scanning	degree	0.953	0.000
2	Pass in one touch with visual scanning	degree	0.684	0.014

Main experiment:

The researcher applied the football skill tests nominated for application on the construction sample consisting of (60) players from the Iraqi Elite Football League clubs, and for each club separately.

Verifying the validity of the tests under study:

Level of ease and difficulty:

The researcher presented the statistical description of the nominated tests under study, as the arithmetic mean, standard deviation and skewness coefficient were extracted for the nominated tests, as it was shown through Table (5) that the values of the skewness coefficient are all less than (+-3), which indicates that the tests used are distributed moderately and it was shown that the tests are at one level of difficulty, "as the test is considered appropriate if its distribution is normal, provided that the tests do not form severe skewness (1).

Table(5) Values of arithmetic means, standard deviations and skewness coefficient for the nominated tests

n	test	unit	mean	Standard ation	skewness
1	1	degree	5	2.12	0.01
2	2	degree	3.45	2.15	0.66

¹ -Salah El-Din Mohamed Allam; Analysis of Psychological, Educational and Social Research Data (Cairo, Dar Al-Fikr Al-Arabi, 2000), p. 78.

Discriminatory ability (power):

After collecting and transcribing the data for the tests under study, the researcher arranged the raw scores for each test in ascending order from “the lowest score to the highest score, from which (27%) of the highest scores and the same number of the lowest scores were selected in order to identify the ability of the tests to distinguish between the high-level group and the low-level group” (1).

Table(6)

Discriminatory power of the skill tests under study

n	test	unit	High level		Low level		T-test	
			Std. or Mean	±	Std. or Mean	±	T	statistic significant
1	A1	deg	8.87	0.3	2.56	0.5	41.0	0,000
2	B2	درج	7.25	0.4	0.75	0.4	41.1	0,000

Statistical methods:

- Arithmetic mean.
- Standard deviation.
- T-test for equal, non-symmetrical samples.
- Skewness coefficient.
- Simple correlation coefficient (Pearson).
- Chi-square test
- Standard scores (Z and T)

¹ - Wahib Al-Kubaisi; Applied Statistics in Social Sciences, 1st ed., (United International, Beirut, Lebanon, 2010), p. 276.

4 -Chapter Four - Presentation, Analysis and Discussion of Results:

4-1 Standardization of Skill Tests

4-1-1 Application of Skill Tests to the Standardization Sample:

Table (7) Values of means, standard deviations, and skewness coefficient and the highest and lowest values for the skill tests of the standardization sample.

n	test	unit	mean	standard deviation	skewness	Highest score	Lowest degree
1	1	degree	4.94	2.16	0.17	9	0
2	2	degree	3.09	2.14	0.82	9	0

The researcher extracted the standard scores for the skill tests by converting the raw scores to standard scores (Z, adjusted T) as shown in Tables (8). The researcher extracted the Z score from the law used (raw score - arithmetic mean / standard deviation) in the event that the test was by score and then entered it in extracting the T score (adjusted).

Table (8) shows the standard Z and T scores for the skill test of suppression and handling according to the visual scanning.

raw score	z	t
0	-2.28	27.12
1	-1.82	31.75
2	-1.36	36.38
3	-.89	41.01
4	-0.43	45.64
5	0.02	50.27
6	0.49	54.9

7	0.95	59.53
8	1.41	64.16
9	1.87	68.79

Table (9) shows the standard Z and T scores for the one-touch handling skill test according to the visual scanning.

raw e	z	t
0	-1.44	35.56
1	-0.96	40.32
2	-0.50	44.90
3	-0.04	49.57
4	0.42	54.25
5	0.89	58.92
6	1.35	63.59
7	1.82	68.27
8	2.29	72.94
9	2.76	77.61

4-1-2 Presentation, identification, analysis and discussion of the standard levels of skill tests for the standardization sample:

After identifying that the sample is distributed normally through the skewness coefficient, in addition to obtaining its standard scores, the researcher used the Gauss curve, which is considered one of the objective methods for estimating scores and is one of the

most common distributions in physical education because many of the characteristics measured in this field are distributed normally.(1)

The researcher chose (5) levels to measure his tests, and when distributing the standard scores to the approved levels, the standard levels appeared to us, as shown in the tables

Standard levels and ratios used in the research

Standard els	Very d	good	average	accepta	weak
Standard os	%2,14	%13,59	%68,27	%13,59	%2,14

Table(10) Levels and their specific percentage in the normal distribution, raw and standard scores (z and t), number of practices and percentage for the extinguishment and handling test according to the visual scanning

The proportion rmined in the nal distribution	Raw re	Z Limits	T Limits	Samp umber	Percentage
Very good	(9)-	(1.87)-(1.41)	64.16 -68.79	17	%12.1
good	- (6)	0.49))– (0.95(	54.9 -59.53	50	%35.7
average	(5) -	-0.43)) -(0.02(	45.64-50.27	21	%15
acceptable	(3) -	-1.36))-(-.89(	36.38-41.01	46	%32.8
weak	(1) -	-2.28))-(-1.82(	27.12-31.75	6	%4.2

The proportion determined in the normal distribution	Raw score	Z Limits	T Limits	Sample number	Percent
Very good	(9)-(8)	2.29)-(2.76(	72.94-77.61	5	%3.5
good	- (6)	1.35))-(1.82(	63.59-68.27	19	%13.5
average	4)(-	0.42))-(0.89(	54.25-58.92	19	%13.5
acceptable	2)(-	-0.50))-(-	44.90-49.57	66	%47.1
weak	0)(-	-1.44))-((-	35.56-40.32	31	%22.1

(11)Table Levels and their specific percentage in the normal distribution, raw and standard scores (Z and T), number of practices and percentage of the one-touch handling test according to the visual scanning

Tables (10-11) show that the percentages of the standard levels shown by the sample in the tests under study, in comparison to these levels on the normal curve, are as follows:

•The first test:

In the first test, the sample showed different percentages in comparison to the percentages determined in the first standard level (very good). The sample achieved a percentage of (12.1), which is a higher percentage than that determined for it in the normal distribution. In the second standard level (good), the sample achieved a percentage of (35.7), which is a higher percentage than that determined for it in the normal distribution. In the third standard level (average), (Salman et al., 2022) the sample achieved a percentage of (15), which is a lower percentage than that determined for it in the normal distribution. In the fourth standard level (acceptable), the sample achieved a percentage of (32.8), which is a higher percentage than that determined for it in the normal distribution. In the fifth standard level (weak), the sample achieved a percentage of (4.2), which is a higher percentage than that determined for it in the normal distribution. We note from the above that the results of

the first test, extinguishing and handling, according to the visual survey of the sample, were limited to the levels (good, average, and acceptable) and (B. R. Jawad et al., 2024), which indicates The sample level was average in the test.

The second test: In the second test, the sample showed different percentages compared to the percentages determined in the first standard level (very good). The sample achieved a percentage of (3.5), which is a percentage higher than the percentage determined for it in the normal distribution. In the second standard level (good), the sample achieved a percentage of (13.5), which is equal to the percentage determined for it in the normal distribution. In the third standard level (average), (Abdulhussein et al., 2024) and (A. F. Jawad et al., 2024) the sample achieved a percentage of (13.5), which is less than the percentage determined for it in the normal distribution. In the fourth standard level (acceptable), the sample achieved a percentage of (47.1) and (Yousif et al., 2023), which is a higher percentage than the percentage determined for it in the normal distribution. In the fifth standard level (weak), the sample achieved a percentage of (22.1) and (Mandoob Makki Ati et al., 2024), which is a higher percentage than the percentage determined for it in the normal distribution. We note from the above that the results of the second test of the sample were limited between the levels (average, acceptable, and weak), which indicates that the sample level was acceptable in the test.

The researcher explains the results as follows: The level of the sample as well as the training age on which the study was conducted from the players of the Iraqi Professional League who are characterized by high and distinguished levels came in proportion to the levels extracted from conducting tests on them (Wesam Najeeb Asleawa, Naji Kadhim Ali, 2020), as the results were centered between the level (good, average and acceptable). This is evidence of the sample being subject to organized training and good supervision by those in charge of the players, (Kadhim, 2023) as well as the sample's involvement in an effective and continuous league despite the existence of a difference in these levels. This is due to the principle of individual differences. (Kadhim, 2024) Therefore, the sample's achievement of different levels is due to the players' diligence in performing skills according to the visual survey, (Kazim et al., 2019) due to the lack of training on visual survey and seeing the field during the performance of the skill in order to be a criterion for the player in achieving good results while performing the skills in matches, and because most of the players' training is based on developing the skill aspect

, this in turn helped to develop many aspects, including awareness and revealing the field to the player because repeated practice of the skill leads to reaching the correct performance of the skill with consistency, harmony and control and without rigidity or

tension. “Repetition and training give the skill more mastery, competition and more precise motor brilliance”.(1)

Conclusions:

- When applying the tests to the standardization sample, the tests were found to be easy, uncomplicated, and can be used by researchers and trainers.
- Skill tests according to visual scanning are an objective criterion because they are more realistic in the process of evaluating skill performance during football matches.
- The results of the current study contribute to raising the levels of visual scanning and correct field vision associated with the performance of football skills.

Recommendations:

- Building and standardizing skill tests according to visual scanning on age groups other than the current research sample related to the Iraqi environment, in addition to skills that were not researched.
- Paying attention to training skills with the peripheral vision of the field that the study addressed, and with comprehensive scientific curricula for both motor and skill aspects.

1 - Wajih Mahjoub; Scientific Research and its Methods: (Baghdad, Ministry of Higher Education and Scientific Research, 2000), p. 175.

Appendix(1)

Expert Opinion Survey on Nominating the Tests Under Study

n	Expert name and Academic title	Specialization	Workplace
1	Prof. Thaer Dawood Ph.D.	Tests and Measurements	University of Baghdad / College of Medicine
2	Prof. Fares Sami	Tests and Measurements / Basketball	University of Baghdad / College of Education
3	Prof. Mohammed Abdul Hussein	Motor Learning / Football	Physical and Sports Sciences
4	Prof. Saleh Radhi Ph.D.	Tests and Measurements / Basketball	University of Babylon / College of Education
5	Prof. Abbas Ali Adhab	Tests and Measurements	Physical and Sports Sciences
6	Prof. Fares Sami Ph.D.	Tests and Measurements / Basketball	University of Baghdad / College of Education
7	Prof. Riyadh Khalil Ph.D.	Tests and Measurements / Volleyball	Physical and Sports Sciences
8	Prof. Zahra Shihab	Tests and Measurements	University of Baghdad / College of Education
9	Asst. prof. Khalil Sattar Ph.D.	Tests and Measurements / Volleyball	Physical and Sports Sciences
10	Asst. prof Ali Saad	Sports Learning / Football	University of Baghdad / College of Education



11	Asst. prof Asmaa mat	Tests and asurements / eyball	Physical and Sports Sciences
12	Asst. prof Ahmed Dhari	Tests and asurements / tball	University of Baghdad / College ducation
13	Lecturer Safwan Abdul ni	Sports ning / Player and ch	Alturath university Physical and rts Sciences

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Designing and standardizing a test to measure the accuracy of long-range shooting from knee level for handball players aged (15-17) years

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Abstract

The researcher noticed a clear weakness in the emerging players in the skill of shooting from the knee level, so he required a way to measure it scientifically through work to evaluate them and the lack of libraries to test this skill for the purpose of discovering the best level of the three levels of the target (upper, middle or lower) that is easier to reach. The study represents a twofold objective, the first of which is to design and build a test to measure the accuracy of the accuracy of shooting with the fulcrum leg from the level of the knees for handball backline players, and the second is the technicalities of this test, and the human field was represented by players of the specialized schools of the Handball Federation with ages (15 - 17 years). old, and the time was: From 4-3-2023 to 5-5-2023, and the spatial domain is the sports halls of these centers in Baghdad and the governorates, and the descriptive method used the survey method and research formed from 12 schools affiliated with these centers in Baghdad and the governorates, and the descriptive method used the survey method and research formed from 12 schools affiliated with these centers in Baghdad and the governorates, and the descriptive method used the survey method and research formed from 12 schools affiliated with these centers in Baghdad and the governorates The research sample consisted of 140 players and the researcher concluded that the test that was designed and standardized can measure this skill properly, the test tool designed by the

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Author performed its effect perfectly, and **recommended** the necessity of using this test and the possibility of applying it to handball players in the future, and the test that was standardized can be developed, modified and applied to other ages both genders.

Keywords: Standard Levels, Test Innovation, Accuracy Measurement Tool, Sudden Shooting

Introduction

Tests and measurements in the field of sports games are among the most important means of evaluation to enhance the fields of education and training and to assess players' levels. Through these tests, coaches can determine the players' level in a particular skill or physical attribute before and during the start of the season. This allows them to develop a work plan for educational or training curricula and to correct their work, if necessary, to ensure continuous improvement of the level. Moreover, these tests enable players to know their own level or even compare it to their peers. The improvement of players' levels to continue their journey in the sports field greatly depends on conducting tests regularly, benefiting from the results, analyzing them, and correcting any deviation from the set goal. Objective tests should be based on solid scientific foundations to give us accurate results that can be relied upon to determine the player's level. Therefore, tests in sports games, including handball, have become very important. Every sports event has a goal that athletes constantly strive to achieve. "Handball is one of the team games widely practiced, and like other sports, players must master all defensive and offensive skills according to their playing style")Fathi, Moushriq Khaleel; Hadi, Zahraa Adnan; Abd Alhussein, Huda Hameed; Hussein, Yasir Najah(545 صفحة، 2024 ،

Therefore, it is essential to know the player's true level to enable us to compete according to those abilities. "Handball is one of the team sports that involves high-level technical and skillful performance, requiring the correct construction in applying the required skillful performance") ، "Safaa Abas Atowan(321 صفحة، 2022 ، Scoring a goal against the opposing team is the ultimate goal for handball players when the player directs the ball to the right spot in the goal. Backline players resort to long-range shots from various levels depending on the level from which the ball leaves the shooter's hand, such as over the head, head level, hip level, or knee level. This can be performed from a stationary position, while walking, running, or jumping. "It can be performed from a stationary position, walking, or running without jumping, taking advantage of a gap in the defense in front of the player carrying the ball to shoot unexpectedly at the goal to score")Moushriq Khaleel Fathi(294 صفحة، 2022 ،. The low shot from knee level is one of its types, and it is considered the most suitable spot where the player can shoot the ball at the goal due to the gaps between the defenders' legs through which the ball can pass during the

shot. Additionally, the position of the defender between the goalkeeper and the attacking player shooting the ball significantly contributes to obstructing the goalkeeper's view, giving the attacker an easy chance to score a goal. This type of shot is named as such because the ball leaves the player's hand at knee level during the shot, requiring the player to exert significant physical effort through preparatory movements accompanied by high shooting power and speed. While the pivot leg is planted, the shooting arm swings back to achieve maximum range of motion, allowing the player to gain substantial momentum as the ball leaves his hand. It is crucial that the player's hand directs the ball upwards during the swinging motion of the shooting arm, with torso rotation helping to push and guide the ball, particularly towards the upper corners of the goal, and other corners in general, allowing the ball to pass beside the defenders' legs of the opposing team. "Therefore, we can say that the trajectory of the ball when shooting at the handball goal has levels like high shooting, low shooting, and waist-level shooting" (Moushriq Khaleel Fathi, 2017).

The Players resort to this type of shooting because handball defenders are characterized by their tall stature and large bodies, which help them block attackers and intercept or deflect the ball's path towards their goal, especially shots from above, in addition to the presence of a goalkeeper at the goal. "Long-distance shooting by backline players requires high skill due to the distance of the shot and the presence of the opposing defender in front of them, as well as the goalkeeper, making accuracy the decisive factor in the success of the shot." (Muhmood Abbass ;Moushriq Khaleel fathi; 2019, صفحة 216). "Therefore, Shooting from above with a jump is often very difficult, so the backline attacker resorts to low shooting from knee level. The ability of the player to surprise the defenders and the goalkeeper and direct the ball to the right spot in the goal means they have a high level of shooting accuracy, allowing them to score and increase the team's goal tally. "The trajectory of the ball when shooting at the handball goal has levels such as high shooting, low shooting, and -level shooting" (Moushriq Khaleel Fathi, 2017).

*Through the observation and follow-up of the researcher for the training of the Iraqi Handball Federation Schools' players and watching some of their matches, it was noticed that there is a clear weakness among these players in this important skill. Therefore, there was a need for a method to measure it scientifically through practical tests to evaluate them and adjust their trajectory. After researching and reviewing scientific sources, it was found that such tests are very rare and old and do not meet expectations. Here lies the research problem: there is an urgent need to design and standardize a modern test to measure this skill, which most researchers and coaches desire, especially after the recent amendments to the game rules. Therefore, the researcher decided to work on designing and standardizing an innovative test to measure the long-range shooting accuracy from below at the defenders' knee level for handball players, to provide a numerical value that

distinguishes players from each other, allowing for their evaluation and contributing to serving the handball community.

Importance of the Study

The importance of this study lies in uncovering the best shooting area from below for backline players towards the goal and determining which of the three target levels (upper, middle, lower) is the easiest to shoot towards compared to other levels. This type of shooting is crucial for young handball players as it is an important skill that they need to master at this age to become a powerful asset for their teams in the future. Through the researcher's observation and follow-up of the training of the Iraqi Handball Federation Schools' players, and watching some of their matches, it was noticed that there is a clear weakness among these players in this important skill. Imagine if the best level among the three target levels (upper, middle, or lower) that is easier to shoot towards is discovered. Due to its importance, there was a need for a method to measure it scientifically through practical tests to evaluate them and correct their trajectory. After researching and reviewing scientific sources, it was found that such tests are very rare, old, and do not meet expectations. ***Here lies the research problem:*** there is an urgent need to design and standardize a modern test to measure this skill, which most researchers and coaches desire, especially after the recent amendments to the game rules. Therefore, the researcher decided to work on designing and standardizing an innovative test to measure the long-range shooting accuracy from the defenders' knee level for handball players, to provide a numerical value that distinguishes players from each other, allowing for their evaluation and contributing to serving the handball community.

The research aims to: Firstly, design and construct a test to measure the long-range shooting accuracy from knee level for backline handball players, and secondly, to standardize this test. The human domain was represented by players from the specialized schools of the Handball Federation aged (15-17) years. The time domain: started from 4-3-2023 to 5-5-2023, and the place domain: the sports halls of these centers in Baghdad and the governorates.

Previous Studies

Study by Ali Abdul-Hussein Hammoud Al-Zargany:)Ali Abd Al Housain Al Zargany(12 صفحة، 2016، (Ali Abdul-Hussein Al-Zargany, 2016, p. 12), "Construction and Standardization of a Set of Skill Tests for the Accuracy of Two Types of Shooting: From the Front and Falling for Front Line Handball Players." The research aims were: to construct a set of skill tests for two types of shooting (jumping forward to the angle position and falling to the pivot position) for front line handball players, and to standardize tests for these types of shooting (jumping forward to the angle position and falling to the pivot position) for handball players. The descriptive method was used, with the community and

sample being elite league players in the Iraqi league season (2015-2016). An innovative electronic device was used to measure shooting accuracy. The study resulted in standardizing a set of tests to measure the accuracy of jumping forward shooting for wing players and falling shooting for pivot players. These findings align with the current study and recommended the need to innovate new tests for goal areas, including the area above and below the goalkeeper.

Study by Moushriq Khalil Fathi and Amir Sattar: : Fathi, Moushriq Khaleel; Sattar, Amir Jabbar (576 صفحة، 2017، "Design and Standardization of a Test to Measure the Accuracy of Jump Shooting for Wing Players from the Angle Position on the Near Goal Side in Handball." The importance of the research lies in assessing the athlete's level, addressing weaknesses, and working on development. The researchers found that handball lacked accuracy tests for shooting from the angle position, so they standardized a test to measure the accuracy of shooting from the angle position on the near goal side using a measuring tool designed by the researchers. The study aimed to design a test to measure the accuracy of jumping forward shooting from the angle on the near goal side and determine its standard levels. The descriptive survey method was used, and they concluded that the test measures what it was intended for. These conclusions align with the current study and recommended that this test can be modified and applied to handball players of other age categories using this tool.

Study by Moushriq Khalil Fathi and Iyad Abdul Mahdi:) Fathi و Mahdy، 2018، "Design and Standardization of a Test to Measure the Accuracy of Long-Range Shooting with High Jump for Handball Players at Specialized Schools for Sports Talents Aged (15-17 Years)." The importance of this study lies in innovating a modern test to measure handball shooting accuracy using an innovative and modern auxiliary tool, as most tests are outdated. This was the research problem, so the researchers aimed to design and standardize a modern test to measure this skill. The study aimed to design a tool to measure long-range shooting accuracy and to standardize a test to measure long-range shooting accuracy with a high jump for handball players. The descriptive survey method was used, with the research sample consisting of five specialized schools for talented players. The researchers concluded that the tool used in the test is essential for measuring handball shooting accuracy, and the test used in the research can be relied upon to measure long-range shooting accuracy with a high jump in handball. These conclusions align with the current study, recommending the use of modern devices and tools in tests and the necessity of standardizing new tests in the future, suggesting the use of the test for other samples.

Study by Mahmood Abbas Hussein:) Mahmoud Abas Housayn(2019،

"The Relationship of Some Biomechanical Variables with the Accuracy of Shooting Skill from High Jump with One Leg and Both Legs Together and the Difference

Between Them for Advanced Handball Players." The study aimed to design and standardize a test for the shooting accuracy from high jump for backcourt handball players, to identify the values of some biomechanical variables for the shooting accuracy skill from high jump with one leg and both legs together, and to identify the type of relationship between some biomechanical variables and shooting accuracy from high jump with one leg and both legs together for handball players. The importance of the research lies in biomechanical analysis and its relationship with shooting accuracy from high jump with one leg or both legs together, identifying the difference between them, and understanding the correct technical performance of this skill. The main findings included designing and standardizing a test to measure long-range shooting accuracy with a high jump in handball, and it was found that shooting accuracy is the same whether jumping with one leg or both legs together. These findings align with the current study, and the researcher recommended relying on this test, emphasizing the body's launch angle for its importance in shooting accuracy, and mastering the skill of long-range shooting from high jump with one leg and both legs together for handball players.

Methodology

The researcher used the descriptive survey method, and the research community consisted of handball players aged 15-17 from 12 schools affiliated with the Handball Federation in Iraq: (Baghdad Rusafa 1, Rusafa 2, Karkh, Nineveh, Diwaniyah, Basrah, thi Qar, Karbala, Wasit, Diyala, Babil, Muthanna). The research sample was selected from 6 schools representing the research community: 3 schools from Baghdad, Wasit, Karbala, and Muthanna, totaling 140 players. A special questionnaire was distributed to the players to determine the easiest or most difficult shooting areas in the goal from their perspective. The goal was divided into six areas, and a tool was fixed in the goal to measure shooting accuracy, as the importance of the goal areas differs. Two areas are at the high level (rectangles, right and left), two at the middle level, and two at the low level. Each area was given a numerical weight after estimating the ease and difficulty level. The tools used included: a regulation handball court, a shooting accuracy measurement tool designed by the researcher, 10 handballs, adhesive tape, a stopwatch, in addition to designing and constructing a tool placed in the goal to measure shooting accuracy, and a mannequin designed to act as a defending player (Figure 1).

Construction Steps:

The researcher conducted two exploratory experiments to estimate the time required to perform the test and identify the appropriate place to position the mannequin in front of the player. The first experiment was conducted on (11-3-2023) on a sample of players from Baghdad Rusafa 1 Handball School, consisting of 6 players who were later excluded. The experiment aimed to identify obstacles and difficulties during which the

shooting accuracy measurement tool was fixed in the goal, and the method of performance was explained to the players. The test was applied, and the researcher observed that the tool did not meet the required purpose of measuring shooting accuracy. Therefore, it was decided to modify the tool to fit the intended purpose, and a suitable solution was reached by adding a vertical stand in the middle of the three levels extending from top to bottom, making the number of shooting areas in the goal 6, aligning with the requirement to measure shooting accuracy. The second exploratory experiment was conducted on the same sample on (29-3-2023), achieving its goal, after which the researcher conducted the main experiment.

Final Test Format:

Test Name: Test to Measure the Accuracy of Long-Range Shooting from Knee Level for Handball Players.

Objective of the Test: To measure the accuracy of long-range shooting from knee level for handball players.

Tools: Handball court, 10 handballs, adhesive tape, stopwatch, iron mannequin designed in the shape of a defending player with a height of 1.5 meters, standing on an iron base and covered with sponge, placed in front of the test player on the free-throw line to create a game-like environment (Figure 1).

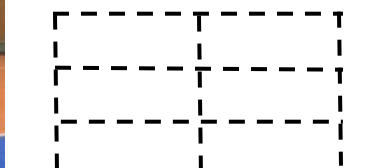


Figure 1: Shows the designed mannequin and the shooting accuracy measurement tool fixed in the goal.

The Long-Range Shooting Accuracy Measurement Tool:

The tool is Hanging on the Goal Frame*and consists of iron bars with a thickness of 8 cm to match the dimensions of the goal frame bars. It is secured in the goal with iron clamps, dividing it into three levels (upper, middle, lower). A vertical bar runs through the center of the goal from the middle of the top crossbar to the ground, dividing the goal into six equal rectangles, (Kazim et al., 2019) each with an area of 61.33 x 142 cm, as a target area, as shown in Figure 1. Each shooting area in the goal is assigned a numerical weight. Shooting is performed from the side of the mannequin placed on the seven-meter line, as shown in Figure 2. There are six shots, with a 5-second rest between each shot. The score is calculated based on the ease and difficulty of the shooting area in the three levels (upper, middle, lower). Shooting at area number 1 (left of the goalkeeper) and area number 2 (right of the goalkeeper) gives the near area 8 points and the far area 6 points. Area number 3 (middle left of the goalkeeper) gives the near area 13 points and the far area 11 points. Area number 4 (middle right of the goalkeeper) gives the near area 12 points and the far area 10 points. Area number 5 (lower left of the goalkeeper) gives the near area 5 points and the far area 3 points. Area number 6 (lower right of the goalkeeper) gives the near area 4 points and the far area 2 points. If the ball rebounds off the inner bars of the tool placed in the goal, it counts as one point. If it rebounds off the goal frame or goes out of the goal, no points are awarded.(Kadhim, 2024a)

Performance Method: After the coach explains the test and performance method, the player is asked to shoot at the goal, which is divided into shooting areas shaped as six rectangles. The sequence starts with area number (1) - the upper-level shooting area to the left of the goalkeeper, rectangle number 1. Then rectangle number 2 - the upper level to the right of the goalkeeper, rectangle number 3 - the middle level to the left of the goalkeeper, rectangle number 4 - the middle level to the right of the goalkeeper, rectangle number 5 - the lower level to the left of the goalkeeper, (Kazim, M. J., Zughair, A. L. A. A., & Shihab, 2019) and rectangle number 6 - the lower level to the right of the goalkeeper. The test player stands behind the free-throw line and in front of the mannequin at a distance that allows them to take preparatory steps. Upon hearing the start signal, they advance, receive the ball from a teammate, and begin the test.(Kadhim, 2023)

Performance Conditions: The shooting must be done sequentially on the shooting areas from (1) to (6) with no more than three preparatory steps. The player is given one attempt, and the highest possible score for the test is (27).

Scoring:

1. Shooting at the first area number (1) - left of the goalkeeper, scores (7) points.
2. The second area number (2) - right of the goalkeeper, scores (5) points.

3. Number (3) - the middle area to the left of the goalkeeper, scores (6) points.
4. Number (4) - the middle area to the right of the goalkeeper, scores (4) points.
5. Number (5) - the lower area to the left of the goalkeeper, scores (2) points.
6. Number (6) - the lower area to the right of the goalkeeper, scores (3) points.

If the ball rebounds off the inner bars of the tool in the goal or enters an unintended shooting area according to the shot sequence, it scores one point. If the ball rebounds off the goal frame or goes out of the goal, no points are awarded.

Table 1*: Shows the levels and the number of successful shots for each level.

Levels	LOW	Acceptable	Average	Good	Very Good
Successful shots	8	8-12	13-16	17-19	21-27

To achieve reliable and highly accurate results, the researcher subjected the raw scores obtained to statistical treatments to find the scientific foundations (validity, reliability, and objectivity). The discriminatory validity of the test was extracted in Table (2), and the correlation coefficient was adopted to calculate the reliability of the test results and their repetition, and the raters' scores were processed to obtain objectivity.

***Table 2*: Shows the reliability and objectivity coefficients of the test.**

Scientific Foundations	Correlation Coefficient	True Significance	Type of Correlation
Reliability	0.992**	0.000	معنوي
Objectivity	0.999**	0.000	معنوي

Discriminatory Power: To determine the discriminatory power, the researcher used the method of extreme groups by adopting 27% of the highest scores and 27% of the lowest scores. The test scores were able to distinguish between the two groups, as shown in Table (2).

Table 3*: Shows the mean, standard deviation, and T-value for the test.

Variable s	Lower Group		Upper Group		T test	True Significance	Type of Difference
	$\bar{y}$	S	$\bar{y}$	S			
Shooting Accuracy Test	13.02632	2.56259	23.6316	1.53202	21.897-	001	Significant

The researcher used the percentage, mean, standard deviation, independent samples t-test, simple correlation coefficient (Pearson), adjusted standard score, and modified standard scores.

Results:

Table 4: Shows the mean, standard deviation, and skewness coefficient for the test sample.

Long-Range Shooting Accuracy Test from Knee Level for Handball Players	Mean	Standard Deviation	Skewness Coefficient
	18.5357	4.34718	-355

The normal distribution curve was divided into five levels for the long-range shooting accuracy test from the backcourt with a pivot leg from knee level on the handball goal, as shown in Table 4.

Table 5: Shows the standard level boundaries for the long-range shooting accuracy test from knee level for handball players.

No.	Standard Levels	Standard Level Boundaries	Shooting Score Levels
1	Low	25-34.99	8 – Goals
2	Acceptable	35-44.99	8-12
3	Average	45-54.99	13-16
4	Good	55-64.99	17-19
5	Very Good	65 and above	21-27

Table 6: Shows the number of sample members, raw scores, and adjusted standard scores for the test.

No.	Raw Scores	Standard Scores	Adjusted Standard Scores	NO.	Raw Scores	Standard Scores	Adjusted Standard Scores	No.	Raw Scores	Standard Scores	Adjusted Standard Scores
1	8	2.42357	25.76	48	17	0.35327	46.47	95	21	0.56687	55.67
2	8	2.42357	25.76	49	17	0.35327	46.47	96	21	0.56687	55.67

3	8	- 2.4235 7	25.76	50	17	- 0.3532 7	46.47	97	21	0.5668 7	55.67
4	9	- 2.1935 4	28.06	51	17	- 0.3532 7	46.47	98	21	0.5668 7	55.67
5	9	- 2.1935 4	28.06	52	17	- 0.3532 7	46.47	99	22	0.7969	57.97
6	11	- 1.7334 7	32.67	53	17	- 0.3532 7	46.47	100	22	0.7969	57.97
7	11	- 1.7334 7	32.67	54	18	- 0.1232 3	48.77	101	22	0.7969	57.97
8	11	- 1.7334 7	32.67	55	18	- 0.1232 3	48.77	102	22	0.7969	57.97
9	11	- 1.7334 7	32.67	56	18	- 0.1232 3	48.77	103	22	0.7969	57.97
10	11	- 1.7334 7	32.67	57	18	- 0.1232 3	48.77	104	22	0.7969	57.97
11	11	- 1.7334 7	32.67	58	18	- 0.1232 3	48.77	105	22	0.7969	57.97
12	11	- 1.7334 7	32.67	59	18	- 0.1232 3	48.77	106	22	0.7969	57.97
13	11	- 1.7334 7	32.67	60	18	- 0.1232 3	48.77	107	22	0.7969	57.97
14	12	- 1.5034 4	34.97	61	18	- 0.1232 3	48.77	108	22	0.7969	57.97
15	12	- 1.5034 4	34.97	62	18	- 0.1232 3	48.77	109	22	0.7969	57.97

16	13	- 1.2734	37.27	63	18	- 0.1232 3	48.77	110	22	0.7969	57.97
17	13	- 1.2734	37.27	64	18	- 0.1232 3	48.77	111	22	0.7969	57.97
18	13	- 1.2734	37.27	65	18	- 0.1232 3	48.77	112	22	0.7969	57.97
19	14	- 1.0433 7	39.57	66	18	- 0.1232 3	48.77	113	22	0.7969	57.97
20	14	- 1.0433 7	39.57	67	18	- 0.1232 3	48.77	114	23	1.0269 4	60.27
21	14	- 1.0433 7	39.57	68	18	- 0.1232 3	48.77	115	23	1.0269 4	60.27
22	14	- 1.0433 7	39.57	69	19	0.1068	51.07	116	23	1.0269 4	60.27
23	14	- 1.0433 7	39.57	70	19	0.1068	51.07	117	23	1.0269 4	60.27
24	14	- 1.0433 7	39.57	71	19	0.1068	51.07	118	23	1.0269 4	60.27
25	15	- 0.8133 3	41.87	72	19	0.1068	51.07	119	23	1.0269 4	60.27
26	15	- 0.8133 3	41.87	73	19	0.1068	51.07	120	23	1.0269 4	60.27
27	15	- 0.8133 3	41.87	74	19	0.1068	51.07	121	23	1.0269 4	60.27
28	15	- 0.8133 3	41.87	75	19	0.1068	51.07	122	23	1.0269 4	60.27

29	15	- 0.8133 3	41.87	76	19	0.1068	51.07	123	23	1.0269 4	60.27
30	15	- 0.8133 3	41.87	77	19	0.1068	51.07	124	23	1.0269 4	60.27
31	16	- 0.5833	44.17	78	19	0.1068	51.07	125	24	1.2569 7	62.57
32	16	- 0.5833	44.17	79	19	0.1068	51.07	126	24	1.2569 7	62.57
33	16	- 0.5833	44.17	80	19	0.1068	51.07	127	24	1.2569 7	62.57
34	16	- 0.5833	44.17	81	19	0.1068	51.07	128	24	1.2569 7	62.57
35	16	- 0.5833	44.17	82	19	0.1068	51.07	29	25	1.4870 1	64.87
36	16	- 0.5833	44.17	83	19	0.1068	51.07	130	25	1.4870 1	64.87
37	16	- 0.5833	44.17	84	19	0.1068	51.07	131	25	1.4870 1	64.87
38	16	- 0.5833	44.17	85	19	0.1068	51.07	132	25	1.4870 1	64.87
39	16	- 0.5833	44.17	86	19	0.1068	51.07	133	25	1.4870 1	64.87
40	17	- 0.3532 7	46.47	87	19	0.1068	51.07	134	25	1.4870 1	64.87
41	17	- 0.3532 7	46.47	88	19	0.1068	51.07	135	25	1.4870 1	64.87
42	17	- 0.3532 7	46.47	89	21	0.5668 7	55.67	136	26	1.7170 4	67.17
43	17	- 0.3532 7	46.47	90	21	0.5668 7	55.67	137	26	1.7170 4	67.17
44	17	- 0.3532 7	46.47	91	21	0.5668 7	55.67	138	26	1.7170 4	67.17

45	17	0.3532 7	46.47	92	21	0.5668 7	55.67	139	27	1.9470 7	69.47
46	17	0.3532 7	46.47	93	21	0.5668 7	55.67	140	27	1.9470 7	69.47
47	17	0.3532 7	46.47	94	21	0.5668 7	55.67				

Table 7*: Shows the percentage distributions of standard levels achieved by the sample in the test.

Long-Range Shooting Accuracy Test from Knee Level for Handball Players						
Natural Curve Levels	%2.14	%13.59	%34.13	%34.13	%13.59	Total
Levels	25-34.99 Low	35-44.99 Acceptable	45-54.99 Average	55-64.99 Good	65 and above Very Good	--
Frequency	15	24	49	47	5	140
Percentage	10.71%	17.14%	35%	33.57%	3.57%	100%
Successful Attempts	8	12-8	16 -13	19 -17	27-21	

Based on Table 6, the percentage distributions of the standard levels achieved by the sample in the test are as follows: the sample achieved a significantly higher percentage in the first level (Low) compared to the percentage designated for it in the natural curve. The sample also achieved a higher percentage in the second level (Acceptable) compared to its designated percentages in the natural curve. In the third level (Average), the sample achieved a slightly higher percentage than the designated one. In the fourth level (Good), the sample achieved a slightly lower percentage than the designated one in the natural curve. However, in the fifth level (Very Good), the sample achieved a much lower percentage than the designated one in the natural curve.

The researcher concluded that these percentages, which appeared after conducting the test on the sample, mostly centered around the Average and Good levels. The rest of the levels showed varying distributions among the individuals. This suggests that the results were balanced and centered approximately around the middle, indicating that the test is easy and straightforward to use. Thus, it can be said that the test was largely centered within the Acceptable and Average levels, which is the desired outcome. This demonstrates the test's success in measuring what it was designed for (accuracy of long-range shooting from knee level), achieving the study's objective. The researcher attributes this to the young



players' lack of technical experience in accurately directing the ball at the goal, given their age categories.(Kadhim, 2024b)

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