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Standardization of the Orientation to Regular Physical Activity Scale in obese women aged (30-35 years)

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Abstract

The study aimed to codify the scale of orientation towards regular physical activity among obese women in the age group (30-35 years), in order to provide a scientific measurement tool that helps trainers in community gyms to design awareness and educational programs that enhance the continuity of physical activity. The researchers adopted the descriptive survey method, and the research population included women between the ages of 30 and 35 who are not overweight. Since the population size was not accurately determined, Cochran's formula was used to determine the sample size, which amounted to 400 trainees. The sample was divided into an exploratory sample (10 trainees) and a control sample (190 trainees) that were randomly selected. The scale consisted of 22 statements, and was applied during the period from October 5 to December 1, 2024. The data was analyzed using SPSS software to extract Z-scores and T-scores and determine standardized levels. The results showed that the scale has good psychometric properties, making it a reliable tool for assessing the orientation towards regular physical activity. The researchers recommended encouraging continuity in physical activity by designing various training plans and using motivational strategies such as group challenges and symbolic rewards to enhance exercise adherence among women in this age group.

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Introduction

Obesity is a complex public health concern that continues to increase worldwide, especially among women aged 30–35 years. Sedentary lifestyles, unhealthy diet, and psychosocial stressors are linked to the rising prevalence of overweight and obesity among this demographic (WHO, 2022). Meanwhile, urbanization and adoption of modern technologies in Iraq have exacerbated physical inactivity and caloric consumption rates (Zhang et al., 2021; Abdulkareem et al., 2024).

Physical inactivity is one of the most significant contributors to weight gain and a broad range of obesity-associated comorbidities, including cardiovascular diseases, type 2 diabetes, and specific cancers (Haardörfer et al., 2014). Apart from assisting in the maintenance of body weight, regular physical activity is also associated with better metabolic and psychosocial health (Tucker et al., 2013). Most importantly, factors related to work, family and society often prevent these women aged 30–35 years from exercising regularly (Al-Eisa & Al-Sobayel 2012; Muttib et al., 2024).

Gaining an understanding of this population's attitudes around physical activity will also inform interventions. Using psychometric tools, it can also help clarify differences in attitudes, motivations and barriers to exercise. These instruments must undergo standardization for the assessment of reliability and validity in various cultural settings, facilitating identification of individuals at risk to which effective programs can be appropriately directed (Garber et al., 2011).

Previous works have shown that such culturally appropriate assessment tools are useful to encourage physical activity among women. Validated questionnaires have been of particular value in enabling the identification of psychosocial determinants of exercise habits (Katzmarzyk et al., 2003). Actually, behavior-change theory–based intervention approaches that consider individual preferences have shown to be more effective than those paying less or no attention to individual preferences in increasing physical activity (Friedenreich et al., 2015).

There is a lack of standardized instrument to assess habitual physical activity orientation among women in Iraq, particularly among non-obese group. Such a gulf hampers the capacity to develop effective strategies for enhancing exercise adherence and improving health outcomes. Therefore this study impacts is to normalized Orientation to Regular Physical Activity Scale into obese women between 30–35 years age group that helps them identifying where they fall in their approach towards physical activity. This is intended to facilitate the development of tailored, culturally sensitive interventions that consider the specific barriers faced by this population.

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Materials and Methods

Research Design

A descriptive survey design was used for the standardization of Orientation to Regular Physical Activity Scale in overweight women aged 30–35 years. This descriptive method is especially applicable in measuring attitudes, behaviors, and perceptions of a given population and allows for the results to be interpreted as a snapshot of the current state of that specific phenomenon (Creswell & Creswell, 2018).

Target Population

The target population was overweight women aged 30–35 years living in Baghdad/Iraq. The population was treated as infinite for sampling purposes due to a lack of precise data on the total number of people with these characteristics.

Sample Size Determination

To determine an appropriate sample size, Cochran's formula was utilized, which is suitable for large or infinite populations and is calculated as follows:

Where:

$$n_0 = \frac{Z^2 \cdot p \cdot (1-p)}{e^2}$$

- n0 = required sample size
- Z= Z-score corresponding to the desired confidence level (1.96 for 95% confidence)
- p = estimated proportion of the population possessing the attribute (0.5 used for maximum variability)
- e= desired level of precision (0.05)

$$n_0 = \frac{(1.96)^2 \cdot 0.5 \cdot (1-0.5)}{(0.05)^2} = \frac{3.8416 \cdot 0.25}{0.0025} = 384.16$$

This led to a calculated sample size of around 385 participants after rounding. However, in order to increase the robustness of the results a larger sample size of 400 participants was used. This method follows recommendations to maintain adequate statistical power in survey research (Lwanga & Lemeshow, 1991).

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The selection was by stratified random sampling in order to accommodate all the diversity of gymnasiums, even all the city of Baghdad. Measuring variation across population subgroups enhances generalizability of results via this method (Etikan & Bala, 2017).

The total sample of 400 participants was divided as follows:

Pilot Study Sample: 10 participants (2.5%) were selected to assess the clarity and reliability of the questionnaire.

Main Study Sample: 190 participants (47.5%) were utilized for the standardization and validation of the scale.

Table 1. *Shows the distribution of the research population, samples, and percentages*

No.	Sample	Number	Percentage
1	Research population	400	100%
2	Exploratory sample	10	2.5%
3	Standardization sample	190	47.5%

The remaining participants were reserved for potential follow-up studies or to compensate for non-responses.

Research Instruments

The following instruments were used to collect data:

- Orientation to Regular Physical Activity Scale: A 22-item questionnaire designed to determine participants' attitude's and behaviours regarding regular physical activity.
- Demographic Information Sheet: Collected data on Age, weight, height and other relevant information.
- Observation Checklist: Used during gym sessions to verify self-reported data against true behavior.

Expert judgment was used to determine the content validity of the questionnaire amongst physical education and psychology experts.

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The equipment and materials used include the following: Electronic calculators for data analysis, Ballpoint pens for manual data recording according to manual entries provided by subjects, Stopwatches for timing physical activities, Computers equipped with SPSS software for statistical analysis.

Data Collection Procedure

Significant time frames include data collection from August 3, 2024, to January 26, 2025. Individual gymnasiums in Baghdad approached participants to establish pre-agreed informed consent describing the purpose and processes of the study. After granting consent, the questionnaire was completed in a controlled manner by the researchers that could clarify all doubts.

Data Analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 26. Means and standard deviations were calculated as descriptive statistics. The reliability and validity for the scale were used inferential statistics (t-tests, z-scores). Normative scores were established to classify the orientation of participants toward physical activity and this was done as part of the standardization process.

Results

Table 2. *The raw scores, frequencies, z-score and t-value of the regular physical activity scale*

Raw scores	Repeats	Z-score	T-score
74	6	-2.14836-	28.52
77	4	-1.85735-	31.43
78	9	-1.76035-	32.4
79	7	-1.66335-	33.37
81	10	-1.46934-	35.31
82	12	-1.37234-	36.28
83	7	-1.27534-	37.25
84	7	-1.17833-	38.22
85	8	-1.08133-	39.19
86	9	-.98433-	40.16

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87	8	-.88732-		41.13	
88	9	-.79032-		42.1	
89	11	-.69332-		43.07	
90	10	-.59631-		44.04	
91	7	-.49931-		45.01	
92	9	-.40231-		45.98	
93	8	-.30530-		46.95	
94	8	-.20830-		47.92	
95	7	-.11130-		48.89	
96	6	-.01430-		49.86	
97	5	0.08271		50.83	
98	3	0.17971		51.8	
99	5	0.27671		52.77	
101	2	0.47072		54.71	
102	2	0.56772		55.68	
103	1	0.66473		56.65	
107	2	1.05274		60.53	
108	1	1.14974		61.5	
109	4	1.24674		62.47	
110	3	1.34375		63.44	
Avg.*	190	M.*	96.14	S.D.*	10.3

* Avg. = Average, M. = Mean, S.D.= Standard deviation

Table 3. *Shows the raw scores, standardized levels and their significance in the regular physical activity scale*

No.	Raw Scores	Standardized Scores T	Levels	Number of Repeats	Percentage
1	79-74	33.37 -28.52	Very Low	26	13.68%

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2	85-80	39.19 -35.31	Low	44	23.16%
3	91-86	45.01 -40.16	Moderate	54	28.42%
4	97-92	50.83 -45.98	Good	43	22.63%
5	103-98	56.65 -51.80	Very Good	13	6.84%
6	110-104	63.44 -60.53	Excellent	10	5.26%
7		Avg.		190	100.00%

Discussion

Meaning that most of the participants have a moderate or just sufficiently low levels of positive attitudes to exercise regularly. The researchers attributing this to what they described as a mix of positive attitudes about exercise overall, but low actual commitment in behavior. Such a shortfall may be due to structural and psychosocial barriers, such as limited free time, family responsibilities and lack of enabling environments that promote lifelong engagement in physical activity.

The earlier literature has also seen such limitations. According to Ogden et al. (2011), time and caregivers are two of the major barriers to regular physical activity among women, accompanied by a belief that they should be doing more but then spend an increasing amount of time inactive. Likewise, it has been reported that although this pattern of positive attitudes is among the best predictors of adoption physical activity maintenance (as stated in Allawi 1994), so-called environmental and societal supports are found to be key players in transferring intentions into long-lasting behaviours (Abdulkareem et al., 2025).

These findings are consistent with previous research where a main reason given for women to exercise, at least get involved with PA is the aspiration to receive optimal body weight and improving their physiological roles in daily life experience (for example energy expenditure). Physical activity is one of the most important factors for improving physical fitness levels and functional capacity, representing an effective preventive measure against obesity-related chronic diseases (Abdulkareem & Hameed, 2017; Al-Ajlouni, 2011).

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Also, there are indications that the extent of physical activity (PA) in women is strongly associated with health outcomes. Multiple studies demonstrate that even moderate-intensity physical exercise performed for 30 minutes/day elicits significant benefits such as cardiovascular health, muscle strength, body weight regulation, appetite control, improved quality of sleep and less risk of non-communicable diseases (WHO, 2022; Warburton & Bredin, 2017; Lee et al., 2012).

According to WHO, adults should do at least 150–300 minutes of moderate-intensity aerobic physical activity, 75–150 minutes of vigorous-intensity aerobic physical activity throughout the week (WHO, 2020). Splitting it into sessions lasting at least 10 minutes each has also proved effective (Piercy et al., 2018).

Furthermore, more women are seeking fitness center membership than men for weight loss and disease control. Such a trend highlights the critical need for public health approaches and interventions to create an enabling environment that considers the specific barriers faced by women (Lian & Atiyah, 2024).

Regular and structured physical activity, according to (Houri 2016), is conducive not only to improving physical health but also to the psychology well-being. Exercise may satisfy psychological needs such as self-esteem, achievement and emotional stability, while it can effectively act to calm within the frame of managing stress and emotional tension (Ali & Jameel, 2020).

Conclusions

the moderate level of orientation registered by the participants highlights that knowledge and attitude need to be complemented with environmental and motivational support measures to promote continued participation in physical activities among women, especially those who are mildly obese.

Recommendations

suggesting better implementing more regular physical activity in women with mild obesity. Implementing measures to improve awareness of the health benefits of exercising, as well as creating opportunities for women and girls to exercise in female-friendly settings should be priorities. Scheduling barriers associated with parenthood and employment can be alleviated by time-efficient exercise alternatives (home or time short exercise programs). Additionally, it has been suggested that incorporating physical exercise education into health care professional services and promoting social support through community-based programs, may promote

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motivation and adherence to exercise engagement. policy makers include creating environments and incentives that facilitate active living. Finally, the concept of including movement where typical sedentary activities are being done using digital devices throughout your day may lead to new keys for sustainably participating in physical activity.

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