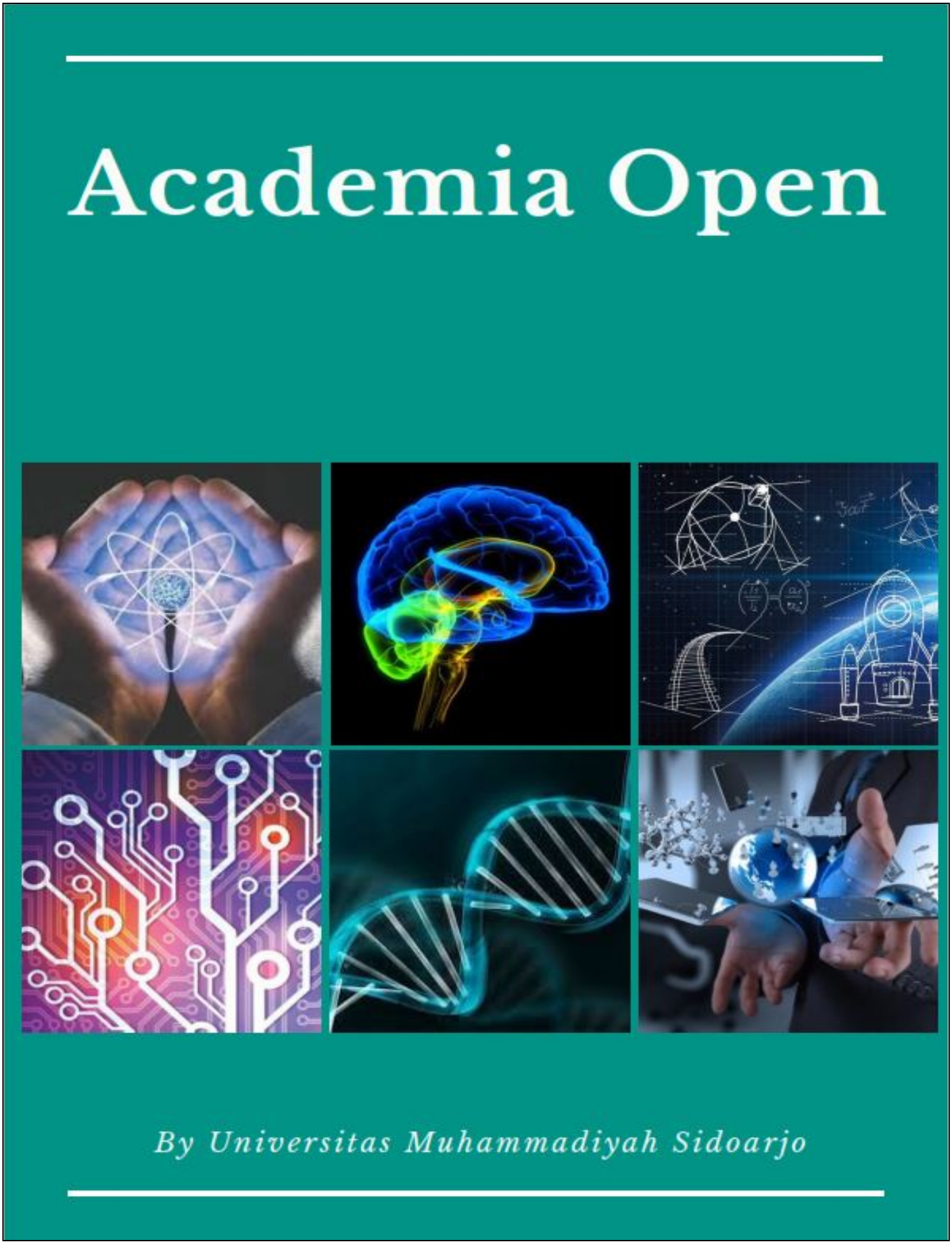
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Conflict of Interest Statement

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Assessment of Nurse's Knowledge Regarding Physiotherapy for Obesity and Overweight

Penilaian Pengetahuan Perawat tentang Fisioterapi untuk Obesitas dan Kelebihan Berat Badan

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Abstract

Obesity is a significant global health issue associated with chronic conditions such as cardiovascular disease, type 2 diabetes, and osteoarthritis. Physiotherapy is increasingly recognized as an essential component of multidisciplinary strategies for effective obesity management. However, there is limited research on nurses' knowledge and involvement in utilizing physiotherapy for obesity care. This study aimed to evaluate registered nurses' understanding of physiotherapy in managing obesity and to identify barriers to its implementation within healthcare settings in Saudi Arabia. A descriptive cross-sectional study was conducted involving 385 registered nurses through an online self-administered questionnaire. The findings revealed that 80.5% of participants correctly identified BMI classifications for obesity, and 65.2% acknowledged physiotherapy as an effective strategy for weight management. Although 72.7% expressed positive attitudes toward physiotherapy, only 38.7% consistently referred obese patients to physiotherapy services. The primary barriers identified were lack of resources (54.5%), time constraints (46.8%), and insufficient knowledge (39.0%). This study is among the first to explore nurses' perspectives on physiotherapy for obesity within the Saudi healthcare context. The results highlight the importance of implementing targeted educational programs and systemic support to enhance nurses' competencies, promote effective referral practices, and improve collaborative care for better obesity management outcomes.

Highlight:

- Nurses show high awareness of obesity risks but low referral rates to physiotherapy.
- Key barriers include limited resources, time constraints, and insufficient training.
- Emphasizes the need for targeted education to enhance interdisciplinary care.

Keyword: Obesity, Overweight,, Physiotherapy, Barriers, Training and education

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Introduction

Obesity can be defined as a medical condition where one has too much body fat to the extent that it may affect health negatively. In many instances, it can be defined by a weird body mass index which, at times, it computed as the weight in k g divided by the height of time in meters squared. For persons whose BMI is greater than 30 kg/m^2, the status of obesity exists while persons with a status of overweight are between 25 and 30 kg/m^2 [1]. Although the technique of measuring BMI is useful in general, it nevertheless has some limitations, particularly due to allometric inaccuracy that may not detect variation in body composition within the individual.

The rapid spread of obesity in almost all parts of the world has raised serious concerns about its impact on public health. Obesity is highly related to a number of chronic diseases, the major ones being cardiovascular diseases, type 2 diabetes, obstructive sleep apnea, some types of cancer, and osteoarthritis. These comorbid conditions contribute highly to morbidity and mortality rates, hence the dire need for management and preventive measures. Management in obesity requires a multi-modal approach, involving not only medical treatments but also modifications in lifestyle, such as dietary and enhanced physical activity [1].

Obesity has a complex and multifactorial etiology that encompasses individual, socioeconomic, and environmental factors. Patterns of diet and physical activity play a central role in the development of obesity; indeed, poor dietary habits combined with sedentary lifestyle are major contributors. Other contributing factors include urbanization and automation of daily activities, which make it less necessary to engage in much physical activity, further worsening the problem. Genetic susceptibility to obesity also plays an important role determining individual's risk of the condition development, which makes it highly variable among populations and regions [2].

Other endocrine disorders, such as hypothyroidism, PCOS, and other metabolic conditions, may also predispose individuals to obesity. Weight increase may also be facilitated by the use of specific medications, especially those that modulate appetite or metabolism. The presence of a mental disorder, such as major depression or anxiety, can result in poor eating habits and lack of motivation to exercise, leading to weight gain and obesity development [3].

Besides these, biological and behavioral factors, there is an addition of endocrine-disrupting chemicals in environmental exposures that have been proposed as contributors to the increase in obesity rates. Present in food, water, and consumer products, these chemicals may interfere with normal metabolic processes and disrupt hormonal balance, further complicating obesity management and prevention. Given the complex interplay of these factors, addressing obesity requires a comprehensive approach that incorporates both individual behavioral changes and broader societal-level interventions [4].

Although dietary and exercise modifications remain important components in the management of obesity, there is growing recognition that physiotherapy is also an effective complement to such strategies. Physiotherapeutic management in obesity should therefore include specific interventions that enhance physical activity, decrease body fat, and overall fitness. Specific interventions might include structured exercise programs, individualized physical fitness activities, and use of physical modalities in the care of specific ills related to the disease, including painful joints and cardiovascular dysfunctions [5,32].

While nurses have a vital role in obesity management through the provision of education, support, and referral for physiotherapy interventions, their knowledge about such specific interventions for obesity and overweight remains uncertain. Knowledge on the issue is important as the nurses are usually the first to engage the patients at an initial stage by giving guidance on lifestyle changes, as well as referring them for various therapies. Therefore, assessing the level of knowledge that nurses have concerning physiotherapy for obesity is very important in order to improve the quality of care and patient outcomes [6,30,31].

This study will seek to assess nurses' knowledge in relation to physiotherapy for obesity and overweight conditions with a view to establishing the level of awareness, challenges faced in implementing physiotherapy interventions, and potential barriers to effective patient education. Targeted education of nurses identified gaps in knowledge, allowing health systems to be better prepared to care for patients with obesity and support them in the management of the disease and its health complications. It may contribute to the elaboration of more effective management strategies for obesity, especially when physiotherapy is combined with routine care [7,29].

Methodology

A. Research Design

The research employed a descriptive cross-sectional study design to assess nurses' knowledge regarding physiotherapy for obesity and overweight. This design was selected because it provides a snapshot of nurses' knowledge and attitudes at a single point in time, allowing for the collection of quantitative data through a self-administered questionnaire.

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B. Study Population

The target population for this research included registered nurses working in hospitals, clinics, and healthcare centers across Saudi Arabia. Nurses from various specialties, such as general nursing, orthopedic nursing, and cardiology nursing, were included, as these specialties are likely to encounter obese and overweight patients. The inclusion criteria were: registered nurses with a minimum of one year of clinical experience, working in healthcare settings where obesity management is routine, and those willing to participate in the study. Nurses who were not involved in obesity management or did not work in healthcare settings were excluded.

C. Sampling Method

A stratified random sampling technique was used to ensure a diverse representation of nurses from various healthcare settings and specialties. A sample size of approximately 385 nurses was determined using a formula for estimating proportions in large populations, with a 95% confidence level and a 5% margin of error. This sample size was considered large enough to provide reliable results and minimize sampling bias.

D. Data Collection Instrument

The primary data collection tool was a structured, self-administered questionnaire. The questionnaire was designed based on existing literature on obesity management and physiotherapy and consisted of several sections:

1. **Section 1: Demographic Information**

This section collected demographic data from participants, including age, gender, years of nursing experience, education level, clinical specialty, and prior training in obesity management and physiotherapy.

1. **Section 2: Knowledge of Obesity and Physiotherapy**

This section assessed nurses' knowledge of obesity, its health implications, and the role of physiotherapy in managing obesity. Questions addressed topics such as BMI classifications for obesity and overweight, health complications related to obesity, and physiotherapy interventions for obese patients.

1. **Section 3: Attitudes Toward Physiotherapy in Obesity Management**

This section explored nurses' attitudes toward the use of physiotherapy in managing obesity. Questions focused on the perceived importance of physiotherapy in obesity management, frequency of referrals for physiotherapy, and factors influencing referral decisions.

1. **Section 4: Barriers to Implementing Physiotherapy**

This section identified the challenges nurses face when implementing physiotherapy for obesity management. It included questions about barriers such as lack of resources, time constraints, and insufficient knowledge or training.

1. **Section 5: Training and Education Needs**

This section assessed the need for further education and training in obesity management and physiotherapy. It included questions on whether nurses had received training in these areas and their interest in attending future training sessions.

E. Validity and Reliability

To ensure the validity and reliability of the questionnaire, content validity was established through expert consultations with professionals in obesity management, physiotherapy, and nursing education. These experts reviewed the questionnaire to ensure its relevance, clarity, and comprehensiveness. A pilot study involving 30 nurses was conducted to test the feasibility and clarity of the questions. This helped identify any ambiguities, and adjustments were made accordingly. The internal consistency of the questionnaire was evaluated using Cronbach’s alpha coefficient, which showed satisfactory reliability.

F. Data Collection Procedure

The questionnaires were distributed electronically to nurses via email or through a secure online platform. This approach was chosen to facilitate wide accessibility and convenience for participants. Nurses were given a two-week period to complete the questionnaire, with reminder emails sent after one week to encourage participation. Data were collected anonymously to ensure confidentiality and to promote honest responses.

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G. Data Analysis

Quantitative data analysis was done using statistical software, SPSS or STATA, after the data collection was completed. Descriptive statistics summarized demographic data and responses to knowledge and attitude questions as frequencies, percentages, means, and standard deviations. Inferential statistics included the use of chi-square tests and t-tests to find significant differences in knowledge and attitudes by selected demographic factors such as age, years of experience, and clinical specialty. The knowledge level and attitude toward physiotherapy for obesity were analyzed for their relationship using correlation analysis.

H. Ethical Considerations

Ethical committee approval was obtained for the study from the appropriate ethics committee or institutional review board. Informed consent in writing about the purpose, procedure, and confidentiality was obtained from all participants. Participation in the research was entirely voluntary. Therefore, participants could withdraw from the process at any point in time without facing any adverse consequences. Further, confidentiality was guaranteed since data were reported only in aggregate. In the study, all ethical guidelines involving human participants were followed.

Results and Discussion

A. Result

The results of the study are based on the analysis of data collected from the self-administered questionnaires distributed to the nurses. Descriptive and inferential statistical methods were used to examine nurses' knowledge, attitudes, and the challenges they face regarding physiotherapy for obesity and overweight. Below are the summarized findings, including demographic information, knowledge levels, attitudes, barriers, and training needs.

1. Demographic Characteristics

The total sample size was 385 nurses. Demographic data collected included age, gender, years of nursing experience, education level, clinical specialty, and prior training in obesity management and physiotherapy.

Variable	Category	Frequency (n)	Percentage (%)
Age	< 30 years	120	31.2
30-40 years	160	41.6	
41-50 years	80	20.8	
> 50 years	25	6.5	
Gender	Male	110	28.6
Female	275	71.4	
Years of Experience	1-5 years	160	41.6
6-10 years	135	35.1	
> 10 years	90	23.4	
Education Level	Diploma	120	31.2
Bachelor's Degree	220	57.1	
Master's/PhD	45	11.7	
Clinical Specialty	General Nursing	230	59.7
Orthopedic Nursing	85	22.1	
Cardiology Nursing	70	18.2	
Training in Obesity Management	Yes	190	49.4
No	195	50.6	
Training in Physiotherapy	Yes	110	28.6
No	275	71.4	

Table 1. ***Demographic Characteristics of Participants***

2. Knowledge of Obesity and Physiotherapy

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The second section of the questionnaire assessed nurses' knowledge about obesity and the role of physiotherapy in managing obesity. Nurses were asked about the BMI classifications for obesity and overweight, health complications related to obesity, and physiotherapy interventions.

Statement	Correct Response (%)	Incorrect Response (%)
BMI classification for obesity (>30 kg/m²)	80.5	19.5
BMI classification for overweight (25-29.9 kg/m²)	75.3	24.7
Obesity is linked to cardiovascular diseases	90.4	9.6
Obesity increases the risk of type 2 diabetes	92.1	7.9
Physiotherapy is effective for weight management in obese patients	65.2	34.8
Physiotherapy can help reduce the risk of musculoskeletal complications in obese patients	78.4	21.6

Table 2. ***Knowledge of Obesity and Physiotherapy***

The data indicated that most nurses were aware of the BMI classifications for obesity and overweight, with over 80% answering correctly. However, only 65.2% of nurses recognized physiotherapy as an effective method for weight management, highlighting a knowledge gap.

3. Attitudes Toward Physiotherapy in Obesity Management

Nurses' attitudes toward the role of physiotherapy in managing obesity were evaluated in the third section of the questionnaire. Respondents were asked about their perceptions of the importance of physiotherapy and their referral practices.

Statement	Agree (%)	Disagree (%)	Neutral (%)
Physiotherapy is important in the management of obesity	72.7	12.9	14.4
I frequently refer obese patients for physiotherapy	38.7	43.4	17.9
Physiotherapy can significantly improve the physical health of obese patients	80.5	11.7	7.8
Physiotherapy should be a routine part of obesity management	67.8	18.4	13.8

Table 3. ***Attitudes Toward Physiotherapy in Obesity Management***

The results showed that the majority of nurses (72.7%) agreed that physiotherapy is important in managing obesity. However, only 38.7% of nurses frequently referred obese patients for physiotherapy, indicating a gap in practice despite positive attitudes.

4. Barriers to Implementing Physiotherapy

The study also examined the barriers to implementing physiotherapy in obesity management. Nurses identified several factors that hindered the referral of obese patients for physiotherapy.

Barrier	Frequency (n)	Percentage (%)
Lack of resources (e.g., physiotherapists, equipment)	210	54.5
Time constraints (e.g., heavy workload)	180	46.8
Lack of knowledge about physiotherapy for obesity	150	39.0

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Patients' lack of awareness of physiotherapy benefits	120	31.2
Lack of institutional support for physiotherapy	100	26.0

Table 4. ***Barriers to Implementing Physiotherapy***

The most significant barrier identified was the lack of resources, such as physiotherapists and equipment, with 54.5% of nurses citing this as a challenge. Time constraints and lack of knowledge also emerged as prominent barriers.

5. Training and Education Needs

The final section of the questionnaire explored the need for further education and training in obesity management and physiotherapy.

Statement	Yes (%)	No (%)
I have received adequate training in obesity management	48.6	51.4
I have received training in physiotherapy for obesity	28.6	71.4
I am interested in attending further training on obesity management and physiotherapy	82.1	17.9

Table 5. ***Training and Education Needs***

A large majority of nurses (82.1%) expressed interest in receiving further training on obesity management and physiotherapy, indicating a significant need for educational programs in this area.

The results revealed that while most nurses had a general understanding of obesity and its health risks, there were significant gaps in knowledge regarding the role of physiotherapy in obesity management. Nurses expressed positive attitudes toward the importance of physiotherapy, but implementation was hindered by barriers such as lack of resources, time, and knowledge. There is a clear need for further training and education to enhance nurses' knowledge and ability to incorporate physiotherapy into obesity management.

B. Discussion

The findings from this study explore nurses' knowledge, attitude, barriers, and training needs related to the role of physiotherapy in the management of obesity and overweight. The study, therefore, uncovers areas that have to be improved in integrating physiotherapy into obesity management and tackling the challenges being faced by nurses on this matter.

Specifically, the research findings indicated that most of the nurses appeared to understand basic concepts that relate to obesity, the classification of BMI, the health risks of obesity: cardiovascular diseases, and Type 2 diabetes. Our findings were thus consistent with previous research that has placed emphasis on the awareness nurses have with regard to obesity's general health consequences such as [8,9.10]. However, there was a significant knowledge gap concerning the role of physiotherapy in weight management, where only 65.2% of the nurses believed that it was effective. This is supported by the study of [11,12], who found that while health professionals are usually aware of the health risks associated with obesity, less is known about effective non-pharmacological interventions like physiotherapy.

A large number of participants, 72.7%, agreed that physiotherapy is an important tool in the management of obesity. Thus, most statements demonstrated positive attitudes towards physiotherapy in their obese patient care. It means the result confirmed conclusions reported by [13,25] on the issue of the significance of using multidisciplinary approaches when dealing with this serious pathology. Yet, in everyday practice, nurses do refer such patients for treatment only in 38.7% of all the possible cases. This discrepancy may be influenced by the barriers that the nurses face, which include lack of resources and time constraints, and is in agreement with the findings of [14,26.27] on the practical challenges of delivering obesity interventions in healthcare.

There were a number of key barriers identified to the effective delivery of physiotherapy in the management of obesity. In general, resources such as the unavailability of physiotherapists and proper equipment were noted as a barrier by 54.5% of the nurses. This has also agreed with the other studies showing that resources pose a major challenge, for instance, the study by [15], noting that inadequate resources compromise comprehensive obesity care. Time was also cited as a significant obstacle in the care and management of obesity, at 46.8% due to heavy workloads. This finding thus stands in tune with [16,17,18]. who identified time pressures among professionals that

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normally restrict the potential use of effective interventions. Also, institutional support was noted as lacking, as were awareness among the patients. All these findings reflect more on the need to adapt improved organizational structures, better policies, and improvements in the education of the general public.

Among the key findings of the research, the interest of nurses to be further educated and trained was expressed. More than 80% of the participants wanted to receive additional training in managing obesity and physiotherapy. This points out the broader need for professional development in this sphere since [19,20,21]. emphasized that health care providers need continuous education in order to be updated about emerging strategies for treatment of the disease. This again brings into focus the need for targeted educational programs, as 51.4% of nurses reported a lack of adequate training in obesity management. Similarly, the scant exposure to physiotherapy training-only 28.6% of nurses reported prior education in this area-highlights the need for incorporating physiotherapy training into nursing curricula and continuing professional development programs.

These findings demonstrate that while nurses generally identify the role of physiotherapy in the management of obesity, a number of barriers prevent its integration into daily practice. These included lack of resources, time constraints, and a lack of knowledge. These will need to be addressed via a multi-faceted approach: increasing the availability of resources, improving institutional support for physiotherapy, and enhancing nurses' training. According to [22,23,24] better understanding of the benefits of non-pharmacological interventions such as physiotherapy by healthcare professionals can improve patient outcomes. Additionally, the findings suggest that some of the challenges regarding awareness and knowledge can be overcome through educational programs targeting nurses and patients[25,28].

Conclusion

This study has highlighted the need for more training and resources to be provided to ensure that physiotherapy is integrated into obesity management appropriately. While nurses generally hold a positive attitude toward the role of physiotherapy, significant barriers to its implementation still exist. Targeted training and organizational support are required to address these barriers and improve the integration of physiotherapy into obesity care. Future studies now need to focus on such interventions' outcome on patients regarding weight management and reduction of health complications arising due to obesity.

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