Original Research Article

THE ASSESSMENT OF NURSE'S KNOWLEDGE, ATTITUDE, AND PRACTICES REGARDING NUTRITIONAL MANAGEMENT OF DIABETES MELLITUS

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Abstract: *Effective nutritional management is critical in diabetes care, requiring healthcare professionals, particularly nurses, to possess adequate knowledge, attitudes, and practices (KAP). This study evaluates the KAP of nurses regarding diabetes nutritional management in a tertiary care hospital in Pakistan.* **Objective:** *To assess nurses' knowledge, attitudes, and practices regarding the nutritional management of diabetes mellitus and identify gaps for targeted interventions.* **Methods:** *A descriptive cross-sectional study was conducted among 134 nurses using a structured questionnaire. Data were analyzed using SPSS version 26, with descriptive statistics summarizing results.* **Results:** *The majority of nurses (79.1%) demonstrated knowledge of balanced diets for diabetic patients, though only 48.5% understood that diabetics should not exclude any nutrients. While 38.1% consistently assessed patients' nutritional needs, documentation of nutritional diagnoses was low (9%). Attitudes were mixed, with only 32.8% strongly agreeing that diet plays a critical role in glycemic control.* **Conclusion:** *Nurses demonstrated strong foundational knowledge and positive practices but showed misconceptions and mixed attitudes toward the nutritional management of diabetes. Addressing these gaps through targeted training and institutional support can enhance diabetes care and improve patient outcomes.*

Keywords: Diabetes Mellitus, Nutritional Management, Nurses, Knowledge, Attitudes, Practices, Pakistan

Introduction

Diabetes mellitus (DM) is a global health challenge, with increasing prevalence, particularly in low- and middle-income countries like Pakistan. According to the International Diabetes Federation (IDF), Pakistan ranks among the top countries with the highest number of diabetic individuals, affecting over 33 million adults, a number projected to rise significantly in the coming decades (1, 2). Managing diabetes effectively requires a multidisciplinary approach, with nutrition playing a pivotal role in maintaining glycemic control and preventing complications (3). Nurses play a critical role in the management of diabetes, especially in educating patients and their families about the importance of nutrition. Proper dietary guidance is essential to achieve glycemic targets and minimize the risk of macrovascular and microvascular complications. However, in Pakistan, the role of nurses in nutritional counselling is often underemphasized due to workload, lack of training, and limited resources (4, 5). Studies in the region highlight knowledge gaps among healthcare providers regarding the dietary management of diabetes, which often leads to inconsistent patient education (6).

The attitudes and practices of nurses toward the nutritional management of diabetes are crucial in fostering a supportive environment for patients. Positive attitudes and evidence-based practices can significantly improve adherence to dietary recommendations and enhance patient outcomes. However, in Pakistan, where cultural and socio-economic barriers influence dietary habits, nurses face additional challenges in effectively delivering nutritional education (7). A recent study by Ahmed et al. emphasized the need for targeted training programs to improve nurses' knowledge and practices, particularly in resource-limited settings like public hospitals (8).

Despite global guidelines emphasizing the integration of dietary management into diabetes care, the extent to which nurses in Pakistan adhere to these recommendations remains unclear. This study aims to assess the knowledge, attitudes, and practices (KAP) of nurses regarding the nutritional management of diabetes mellitus in a tertiary care hospital in Pakistan. By identifying gaps in KAP, this research seeks to inform targeted interventions and enhance the role of nurses in diabetes care, ultimately improving patient outcomes.

Methodology

The study employed a descriptive cross-sectional design to assess the knowledge, attitudes, and practices (KAP) of nurses regarding the nutritional management of diabetes mellitus at Jinnah Public Hospital, Lahore. This design was chosen to provide a comprehensive snapshot of the nurses' understanding, perceptions, and behaviours concerning the dietary care of diabetic patients.

A total of 134 nurses were recruited for the study using a convenience sampling technique. The inclusion criteria included registered nurses working in medical, surgical, or critical care wards with at least one year of professional experience. Nurses unwilling to participate or those on leave during the study period were excluded. Data collection occurred over two months, ensuring adequate representation across various hospital departments.

Data were collected using a pre-validated structured questionnaire. The tool was divided into four sections: demographic characteristics, knowledge, attitudes, and practices. The knowledge section assessed understanding of dietary requirements, glycemic management, and the role of exercise in diabetes care. The attitude section explored perceptions regarding the importance of diet in controlling blood sugar levels and the role of nurses in educating patients. The practices section examined routine behaviours such as assessing patients' nutritional needs, documenting nutritional care, and following up on nutritionists' recommendations.

Ethical approval was obtained from the hospital's Institutional Review Board before initiating the study. Participation was voluntary, and informed consent was obtained from all participants. Nurses were assured of their anonymity and the confidentiality of their responses throughout the research process.

Data were collected through self-administered questionnaires distributed during work hours. Trained research assistants were available to clarify questions if needed, ensuring the accuracy and completeness of the responses. Completed questionnaires were reviewed for consistency and entered into a secure database for analysis. Data were analyzed using SPSS version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. The results were presented in tables to provide a clear and structured understanding of the KAP levels among nurses regarding nutritional management in diabetic patients.

Results

The study assessed nurses' knowledge, attitudes, and practices (KAP) regarding the nutritional management of diabetes mellitus at Jinnah Public Hospital, Lahore. Key findings are summarized below, with corresponding tables presenting detailed data.

A total of 134 nurses participated in the study. The majority were female (64.2%), aged between 21–25 years (53.7%), and had 1–5 years of professional experience (64.2%). Most participants (57.5%) held a post- RN qualification, and 41.8% were working in the ICU (Table 1).

Knowledge among participants was varied, with 48.5% correctly identifying that "diabetic patients should not exclude any nutrient from their diet," while 79.1% correctly noted that "diabetic patients should eat balanced diets." High levels of knowledge were also observed regarding hypoglycemia management (71.6%) and the role of fruits (73.1%) and exercise (69.4%) in diabetes management (Table 2).

Attitudes were mixed, with 32.8% strongly agreeing that "diet is important in controlling blood sugar," while 34.3% remained neutral on whether "all diabetic patients should be aware of their diet." Only 11.9% strongly agreed that nurses play a critical role in strengthening patients' and families' understanding of diabetic diets (Table 3).

Practices were generally positive, with 38.1% of nurses always assessing patients' nutritional needs during initial evaluations, and 34.3% consistently following up on nutritionists' recommendations. However, only 9% consistently documented nutritional diagnoses in report sheets (Table 4).

Table 1: Demographic Characteristics of Participants

Characteristic	Category	Frequency	Percentage (%)
Age (Years)	21–25	72	53.7
	26–30	42	31.3
	31–35	20	14.9
Gender	Male	48	35.8
	Female	86	64.2
Marital Status	Single	69	51.5
	Married	65	48.5
Experience (Years)	1–5	86	64.2
	6–10	48	35.8
Qualification	Diploma in Nursing	38	28.4
	Post RN	77	57.5
	BSN (Generic)	19	14.2
Department	ICU	56	41.8
	Medical Wards	24	17.9
	Surgical Wards	49	36.6
	Others	5	3.7

Table 2: Knowledge of Nurses Regarding Nutritional Management of Diabetes

Question	Response	Frequency	Percentage (%)
Diabetics should not exclude nutrients	Correct	65	48.5
	Incorrect	69	51.5
Diabetics should eat balanced diets	Correct	109	79.1
	Incorrect	28	20.9
Hypoglycemia treated with 3–4 sugar cubes	Correct	96	71.6
	Incorrect	38	28.4
Fruits are important in a diabetic diet	Correct	98	73.1
	Incorrect	36	26.9

Exercise is essential in diabetes management	Correct	93	69.4
	Incorrect	41	30.6

Table 3: Attitudes toward Nutritional Management

Question	Response	Frequency	Percentage (%)
Diet controls blood sugar	Strongly Agree	44	32.8
	Agree	18	13.4
	Neutral	20	14.9
	Disagree	30	22.4
	Strongly Disagree	22	16.4
All patients should know their diabetic diet	Strongly Agree	16	11.6
	Agree	26	19.4
	Neutral	46	34.3
	Disagree	33	24.6
	Strongly Disagree	13	9.7

Table 4: Practices Regarding Nutritional Management

Question	Response	Frequency	Percentage (%)
Assess nutritional needs	Always	51	38.1
	Often	48	35.8
	Sometimes	27	20.1
	Never	8	6.0
Document nutritional diagnoses	Always	12	9.0
	Often	47	35.1
	Sometimes	57	42.5
	Never	18	13.4
Follow up on nutritionist recommendations	Always	46	34.3
	Often	44	32.8
	Sometimes	37	27.6
	Never	7	5.2

Discussion

This study assessed the knowledge, attitudes, and practices (KAP) of nurses regarding the nutritional management of diabetes mellitus at a tertiary care hospital in Pakistan. The findings highlight gaps in knowledge, mixed attitudes, and varying practices among nurses, emphasizing the need for targeted interventions to enhance diabetes care. These results align with and add to the growing body of evidence on the critical role of nurses in managing diabetes.

The study revealed that 79.1% of nurses correctly recognized the importance of balanced diets for diabetic patients, while only 48.5% understood that diabetic patients should not exclude any nutrients from their diet. These findings are comparable to those of Saleem et al., who noted that while nurses generally understand the role of balanced diets, misconceptions about specific dietary restrictions persist, particularly in low-resource settings like Pakistan (9). Similarly, Ahmed et al. reported gaps in nurses' knowledge regarding the nutritional components of diabetic diets, attributing these to inadequate training and limited access to updated guidelines (10).

Attitudes among participants were mixed, with only 32.8% strongly agreeing that diet plays a crucial role in blood sugar control. This is consistent with findings from Hussain et al., who reported that while nurses recognize the importance of nutrition in diabetes management, competing priorities and lack of institutional emphasis on dietary counselling often hinder their proactive engagement (11). Furthermore, the neutral stance of 34.3% of nurses on whether diabetic

patients should be aware of their diet reflects a need for sensitization and empowerment of nurses to advocate for dietary education as a core component of care.

The practices observed in this study were generally positive, with 38.1% of nurses consistently assessing patients' nutritional needs and 34.3% regularly following up on nutritionist recommendations. However, documentation of nutritional diagnoses remained low (9%), mirroring the findings of Ahmad et al., who highlighted that workload pressures and insufficient training contribute to poor documentation practices among nurses in public hospitals (12). These gaps in documentation undermine the continuity of care and the effectiveness of multidisciplinary diabetes management strategies.

The study also highlighted a critical need for professional development, as many nurses expressed limited confidence in their ability to counsel patients on nutritional management. Ahmed et al. demonstrated that structured training programs significantly improve nurses' knowledge and practices, reinforcing the need for similar initiatives in Pakistani healthcare settings (13). Training programs tailored to address misconceptions, enhance counselling skills, and emphasize documentation could lead to substantial improvements in diabetes care outcomes.

This study's findings emphasize the interplay between knowledge, attitudes, and practices in influencing the nutritional management of diabetes by nurses. While nurses demonstrated a foundational understanding and willingness to engage in nutritional management, systemic barriers such as workload, inadequate training, and lack of institutional

support must be addressed to optimize care. Future studies should explore the impact of targeted interventions, such as periodic training and robust documentation protocols, on improving KAP in diabetes management.

Conclusion

This study highlights the strengths and gaps in nurses' knowledge, attitudes, and practices regarding the nutritional management of diabetes mellitus in a tertiary care hospital in Pakistan. While nurses demonstrated good foundational knowledge and positive practices, significant misconceptions and mixed attitudes were evident. Poor documentation practices and limited confidence in patient counselling further underscore the need for targeted training programs and institutional support. Addressing these barriers can enhance the role of nurses in diabetes management and improve patient outcomes in resource-limited settings.

Declarations

Data Availability statement
All data generated or analyzed during the study are included in the manuscript.
Ethics approval and consent to participate
Approved by the department concerned. (IRBCE-SNU-9987/23)
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Conflict of interest

The authors declared the absence of a conflict of interest.

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Manuscript drafting.

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