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Original Research Article

Analysis of the Level of Knowledge of Nurses Regarding Nutritional Diet Regimes

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Abstract: *Nutritional counseling is a critical component of disease prevention and management. Nurses, being at the forefront of patient care, must possess adequate knowledge about dietary regimens to effectively guide patients with chronic diseases such as diabetes, cardiovascular disease (CVD), and obesity. However, data on nurses' nutritional knowledge in hospitals remains limited in Pakistan.* ***Objective:*** *To analyze the knowledge of registered nurses regarding nutritional diet regimens for obesity, diabetes, and cardiovascular diseases (CVD) in a tertiary care hospital.* ***Methods:*** *A cross-sectional study was conducted in the Nursing Department of Nishtar Hospital, Multan, from February 2024 to February 2025. One hundred registered nurses working the day shift across various departments (internal medicine, neurology, surgery, obstetrics, pediatrics, and nephrology) were surveyed. Basic demographic data were recorded, including qualification, years of experience, and department. A validated 42-item questionnaire assessed knowledge of dietary management for diabetes, obesity, and CVD. Data were analyzed using SPSS version 25. Statistical significance was determined using appropriate inferential tests with a p-value ≤ 0.05.* ***Results:*** *The overall nutritional knowledge level among nurses was 59%, with subcategory scores of 69% for diabetes, 54% for obesity, and 59% for CVD. Knowledge scores were significantly higher among nurses with 11 or more years of experience (p = 0.019) and those holding a master's degree (p = 0.018). However, knowledge scores across different hospital departments found no statistically significant difference.* ***Conclusion:*** *Nurses demonstrated below-average knowledge regarding nutritional regimens for patients with diabetes, CVD, and obesity. This highlights the urgent need for structured education and training programs focused on clinical nutrition to effectively empower nurses to manage the growing burden of non-communicable diseases.*

Keywords: CVD, Diabetes, Knowledge, Nutrition

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Introduction

Cardiovascular and metabolic diseases have become the leading cause of morbidity and mortality all over the World in the last decade. These conditions significantly affect patients' quality of life and hinder normal functioning. However, one of their major modifiable risk factors is nutrition. Studies have reported a significant association between diet quality, CVD, and metabolic diseases. (1-3)

Pakistan's traditional foods, rice, meat, fish, and vegetables, contribute greatly to preventing CVD and metabolic diseases. However, due to the fast food trend, the nutritional content has shifted to a high-fat and low-carb diet. In addition, patients with diseases also follow these dietary habits, which is why their incidence is increasing rapidly. The reason for this is the lack of personal nutritional knowledge and dietary education that healthcare professionals provide.

Literature shows that medical personnel, especially nurses, are ill-informed and exhibit a limited level of knowledge regarding therapeutic diet (4-6). This is alarming as nurses are directly involved with patients and can often be the only source of information for them. Since nutritional programs and training platforms are insufficient in our country, diet is often a risk factor for the development of illnesses.

This study was conducted to analyze nurses' knowledge regarding nutritional diet regimens.

Methodology

A cross-sectional study was conducted in the Nursing Department of Nishtar Hospital, Multan, from February 2024 to February 2025. A total of 100 registered nurses working a day shift in the internal medicine, neurology, surgery, obstetrics, pediatrics, and nephrology departments of the hospital were selected for the survey. Informed consent was obtained from all participants. Non-consenting nurses were excluded. Ethical approval was secured from the hospital's ethical committee.

The basic information about nurses' qualifications, experience, and employment was recorded. A 42-item questionnaire inquired about the nutritional knowledge of nurses for obesity, diabetes, and CVD. The questionnaire was divided into three categories with 14 questions about obesity, eight questions about diabetes, and 20 questions about CVD. Response could be provided on a Likert scale by answering agree, disagree, or do not know. The correct response rate was calculated to evaluate the level of knowledge. The questionnaire included common traditional foods to generate specific results for the Pakistani population. A correct response added one point to the score, and an incorrect response or answering do not know was marked as zero points.

All data were analyzed using SPSS version 20. Frequencies and percentages were used to express demographics and the average correct response rate. Correct response rates to subcategories were expressed as mean and standard deviation. ANOVA was performed to compare the intergroup knowledge levels. Statistical significance was set at $p < 0.05$.

Results

The questionnaire response rate was 100%. 75 (75%) nurses had a bachelor's degree, 20 (20%) had a nursing diploma, and 5 (5%) had a master's degree. The majority of the population worked in internal medicine (35%), followed by surgery (30%), neurology (15%), and pediatrics and obstetrics (15%). 60(60%) had one to five years of working experience. The demographic details of participants are shown in Table 1.

The overall knowledge level was 59%, with 69%, 54%, and 59% for diabetes, obesity, and CVD, respectively. Half of the nurses wrongly answered 70% of the questions. The knowledge rate was highest in nurses with 11 or more years of experience (p=0.019) and a master's degree (p=0.018). The knowledge score did not differ significantly for the working unit. The knowledge scores of the study groups are shown in Table 2.

Diabetes-related knowledge was 69%, which is the highest among the subcategories. 95% correctly identified that fruits were safe for diabetic patients and the limited consumption of carbohydrates. On the other hand, 44% of nurses did not know about restricted consumption of animal fat in diabetics, and 70% were unaware that there is no restriction on the use of complex carbohydrates.

Obesity-related knowledge was 54%, with a correct response rate of 92% for carbohydrate distribution in diet, 81% for weekly weight loss targets, and 90% for fiber intake. However, 60% were wrong about the attribution of diet intake leading to obesity, and 90% were unaware of the first-line management of obesity. Also, 97% of nurses were unaware that a low-carb diet contributes to weight loss by inducing a diuretic effect.

Nurses performed well in CVD-related questions, with a 59% knowledge rate. 84% were aware that diuretics can cause potassium deficiency, and 78% knew that CVD risk can be reduced by consuming omega-3 fatty acids. However, 80% were unaware that water-insoluble fiber cannot manage blood cholesterol. 84% did not know the dietary sources of cholesterol, and 75% did not know about fatty acid-rich foods.

Table 1: Personal Characteristics of Participants

Factors	N(%)
Department	
Internal medicine	35 (35%)
Neurology	15 (15%)
Surgery	30 (30%)
Pediatrics and obstetrics	15 (15%)
Nephrology	5 (5%)
Experience	
1-5 years	60 (60%)
6-10 years	30 (30%)
≥ 11 years	10 (10%)
Education	
Diploma	20 (20%)
Bachelors	75 (75%)
Masters	5 (5%)

Table 2: Correct Response Rates according to Demographics

	Diabetes	Obesity	CVD	Total score
Department				
Internal medicine	68.2 ± 14.71	56.93 ± 13.77	57.11 ± 10.94	60.18 ± 10.56
Surgery	67.95 ± 15.09	53.04 ± 10.63	57.22 ± 9.71	59.10 ± 8.57
Neurology	68.88 ± 12.73	51.41 ± 11.68	55.89 ± 9.73	56.07 ± 8.25
Others	69.75 ± 14.27	55.52 ± 10.83	55.34 ± 11.19	56.87 ± 10.07
P value	0.788	0.004	0.574	0.301
Experience				
1-5 years	68.51 ± 15.97	53.60 ± 11.17	56.85 ± 9.91	58.22 ± 7.97
6-10 years	68.06 ± 13.58	56.98 ± 13.21	60.41 ± 10.66	60.65 ± 8.99
≥ 11 years	69.05 ± 66.62	57.86 ± 14.97	63.20 ± 10.63	62.69 ± 8.19
P value	0.667	0.018	0.0	0.019
Education				
Diploma	67.65 ± 12.81	54.90 ± 14.87	58.44 ± 11.36	59.08 ± 8.26
Bachelors	68.52 ± 14.84	54.48 ± 13.53	58.09 ± 9.87	59.12 ± 7.31
Masters	71.68 ± 13.18	56.94 ± 14.62	64.11 ± 10.77	64.10 ± 8.24
P value	0.345	0.560	0.005	0.018

Discussion

This study evaluated nurses' knowledge regarding diet regimens for patients with diabetes, CVD, and obesity. The results showed a below-average level of knowledge, especially in CVD and obesity subcategories. Knowledge score was significantly associated with qualification and working experience. The overall knowledge score is 59%, similar to studies conducted in a similar format. (7-9)

Although the incidence of obesity is increasing at an alarming rate in Pakistan, the obesity knowledge score was the lowest among nurses. This requires an action in educational institutes and hospitals to arrange training sessions for nurses, as obesity is a major cause of CVD and hypertension. In comparison to this, the knowledge rate for diabetes was 69%, which is similar to previous studies. Farzaei et al reported a 61.2% knowledge score for nutritional diabetes management in nurses. (10) Magnus and Besong also reported a 62.9% nutritional rate for diabetes. (11)However, Elmahdy et al showed a significantly lower knowledge rate of 44% compared to our study. (12)

The knowledge rate about CVD was satisfactory, which may be due to the frequent cases handled by nurses. A study conducted in Bangladesh also showed the same results because participants had similar demographics. (13) However, a Moroccan study reported significantly lower nutritional knowledge about non-communicable diseases, especially CVDs.(14)

Conclusion

The nutritional knowledge of nurses about diet regimes of patients with diabetes, CVD, and obesity was below average. This highlights the need for educational and training programs to mitigate the increasing risk of these conditions.

Declarations

Data Availability statement
All data generated or analysed during the study are included in the manuscript.
Ethics approval and consent to participate
Approved by the department concerned. (IRBEC-MMS-07012-24)
Consent for publication
Approved
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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

MA (Nursing Officer)
Manuscript drafting, Study Design,
BT (Nursing Officer)
Review of Literature, Data entry, Data analysis, and drafting articles.
FN (Nursing Officer)
Conception of Study, Development of Research Methodology Design,

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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