Original Research Article

Assessing Fourth-Year Nursing Students' Knowledge, Attitudes, and Practices Toward Nutritional Management in Diabetes Mellitus

ABSTRACT

Aims: To assess the knowledge, attitudes, and practices of fourth-year nursing students toward nutritional management in Diabetes Mellitus and to determine whether significant relationships exist among these variables.

Study design: Descriptive cross-sectional correlational research design.

Place and Duration of Study: The study was conducted in a private college institution in Iloilo City, Philippines, among fourth-year nursing students during the Academic Year 2025–2026.

Methodology: The study included 222 fourth-year nursing students selected from a population of 520 using simple random sampling through the fishbowl method. Data were collected using an adapted and validated questionnaire composed of four parts: demographic profile, knowledge, attitudes, and practices related to nutritional management in Diabetes Mellitus. Knowledge was measured using a dichotomous scale, while attitudes and practices were assessed using Likert-scale items. Descriptive statistics were used to analyze the level of knowledge, attitudes, and practices, while Spearman's rho correlation was utilized to determine the relationships among the variables.

Results: The findings revealed that respondents demonstrated an adequate level of knowledge regarding nutritional management in Diabetes Mellitus, with an overall mean knowledge score of 9.39 out of 12. Most students also showed positive attitudes toward nutritional management, with 70.27% categorized as having a positive attitude. In terms of practice, the majority (76.13%) demonstrated good practices, with an overall mean score of 3.36 out of 4. A significant relationship was found between knowledge and attitude ($\rho = 0.153$, $p = 0.000$) and between attitude and practices ($\rho = 0.241$, $p = 0.000$). However, no significant relationship was observed between knowledge and practices ($\rho = 0.006$, $p = 0.934$).

Conclusion: Fourth-year nursing students generally possess adequate knowledge, positive attitudes, and good practices regarding nutritional management in Diabetes Mellitus. The findings highlight that while knowledge contributes to shaping attitudes, attitude plays a more influential role in translating knowledge into clinical practice. Strengthening nursing education and clinical training in diabetes nutrition management may further enhance students' preparedness to deliver effective patient care.

Keywords: Diabetes Mellitus, nutritional management, nursing students, knowledge attitudes and practices, nursing education

1. INTRODUCTION

Diabetes Mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycemia resulting from defects in insulin secretion, insulin action, or both. It has become one of the most prevalent non-communicable diseases worldwide and continues to pose a significant public health challenge due to its growing incidence and associated long-term complications affecting the cardiovascular system, kidneys, eyes, and nerves (World Health Organization, 2024). Globally, an estimated 529 million people were living with diabetes in 2021, and this number is projected to increase to approximately 1.31 billion by 2050 if effective preventive and management strategies are not implemented (Institute for Health Metrics and Evaluation, 2024; Yameny, 2024). In the Philippines, diabetes remains a major health concern, affecting millions of adults and contributing substantially to morbidity and mortality rates. Lifestyle-related factors such as poor dietary habits, sedentary behavior, and increasing rates of obesity have significantly contributed to the growing burden of the disease (International Diabetes Federation, 2024).

Proper nutritional management is widely recognized as a fundamental component of diabetes care because diet plays a crucial role in regulating blood glucose levels and preventing disease-related complications. Medical nutrition therapy, combined with pharmacological treatment and lifestyle modification, has been shown to improve glycemic control and overall health outcomes among individuals with diabetes (Evert et al., 2019; Franz et al., 2021). Healthcare professionals, particularly nurses, play an essential role in providing patient education and promoting adherence to appropriate dietary practices. Nurses frequently interact with patients in clinical settings and are often responsible for providing guidance on lifestyle modification, dietary planning, and long-term disease management. Therefore, nursing students must develop adequate knowledge, positive attitudes, and effective practices related to the nutritional management of Diabetes Mellitus to ensure that they are well prepared to provide competent and evidence-based care.

Several studies have explored the knowledge, attitudes, and practices of healthcare professionals and students regarding diabetes management. Research indicates that healthcare providers with sufficient knowledge and positive attitudes toward diabetes care are more likely to promote effective self-management behaviors among patients and contribute to improved disease outcomes (Farzaei et al., 2023; Kueh et al., 2020). However, previous studies have also identified gaps in knowledge and inconsistencies in clinical practice among nursing students, particularly in areas related to nutritional counseling and dietary management for patients with diabetes (Alshammari et al., 2023; Mancin et al., 2023). These findings suggest that although theoretical knowledge may be present, the ability of students to translate this knowledge into practical application during clinical practice may still be limited. Furthermore, attitudes toward diabetes care and confidence in providing patient education may significantly influence the effectiveness of nursing students in promoting healthy behaviors among patients.

Despite the increasing global focus on diabetes management, limited research has specifically examined the knowledge, attitudes, and practices of nursing students toward nutritional management in Diabetes Mellitus, particularly within the Philippine context. Many existing studies focus primarily on patient self-care behaviors rather than evaluating the preparedness of future healthcare professionals responsible for delivering diabetes education and counseling. This gap highlights the importance of assessing whether nursing students possess the necessary competencies to effectively guide patients in adopting appropriate dietary practices and managing their condition. Understanding these factors may also help identify potential gaps in nursing education and inform improvements in curriculum design and clinical training programs.

2. METHODOLOGY

2.1 RESEARCH DESIGN

This study utilized a descriptive-correlational, cross-sectional research design to assess the knowledge, attitudes, and practices (KAP) of fourth-year nursing students regarding nutritional management in diabetes mellitus. The design enabled the researchers to describe variables as they naturally occur and examine the relationships among them without any manipulation. While causality was not established, the study determined whether significant associations existed among knowledge, attitudes, and practices. Data was collected at a single point in time, making this approach appropriate for obtaining a reliable snapshot of students' preparedness in an academic setting .

2.2 STUDY SETTING

The study was conducted in a private college located in Iloilo City, Western Visayas, Philippines, specifically within the College of Nursing. The institution was selected due to its accessibility and relevance to the target population. To ensure confidentiality, the name of the school was not disclosed. The setting provided a suitable academic environment for data collection, as it allowed access to fourth-year nursing students who were nearing completion of their program and had sufficient exposure to both theoretical and clinical experiences .

2.3 POPULATION AND SAMPLING

The population of the study consisted of fourth-year nursing students enrolled during the Academic Year 2025–2026. Respondents were selected using a simple random sampling technique to ensure equal opportunity for participation and to minimize sampling bias. Only students who met the inclusion criteria and provided informed consent were included in the study. This sampling approach strengthened the representativeness of the sample and enhanced the reliability of the findings within the selected population .

2.4 INSTRUMENTATION

The researchers used a structured, adapted, and validated questionnaire as the primary data collection tool. The instrument was designed to measure the three components of the KAP framework: knowledge, attitudes, and practices. It consisted of three parts: Part I assessed the respondents' knowledge regarding nutritional management in diabetes mellitus; Part II measured their attitudes toward dietary management; and Part III evaluated their actual practices in clinical settings. The questionnaire underwent validity and reliability testing to ensure accuracy and consistency of responses. A Likert scale was used to quantify responses, facilitating statistical analysis .

2.5 DATA GATHERING PROCEDURE

Prior to data collection, the researchers secured the necessary approvals from the appropriate authorities and obtained ethical clearance. Participants were informed about the purpose of the study, and informed consent was obtained before participation. The questionnaires were distributed in paper format to eligible fourth-year nursing students and were completed within a designated period. The researchers provided guidance when necessary while ensuring minimal disruption to the respondents. Completed questionnaires were collected, organized, and securely stored to maintain confidentiality and data integrity throughout the research process .

2.6 DATA ANALYSIS PROCEDURE

The collected data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics, including frequency, percentage, and mean, were used to summarize the levels of knowledge, attitudes, and practices among the respondents. Inferential statistics, specifically Spearman's rho, were employed to determine the relationships among the variables. The level of significance was set at $\alpha = 0.05$ to test the hypotheses. These statistical methods enabled the researchers to interpret the data accurately and identify significant correlations among the study variables

3. RESULTS AND DISCUSSION

Level of Knowledge of Fourth-Year Nursing Students regarding Nutritional Management in Diabetes Mellitus

The level of knowledge among 222 fourth-year nursing students regarding nutritional management in diabetes mellitus was assessed using a validated questionnaire, with scores categorized based on Bloom's cut-off points. The findings revealed that the majority of respondents demonstrated a high level of knowledge (83.33%), followed by moderate knowledge (14.41%), and a minimal proportion with low knowledge (2.25%) .

Students reported the strongest knowledge in fundamental concepts of diabetes care, including balanced diet, dietary composition, and the role of nutrition in disease management, highlighting the effectiveness of academic preparation and clinical exposure in enhancing knowledge levels.

Lower proportions were observed in the moderate and low knowledge categories, suggesting that some students experience gaps in understanding specific aspects of nutritional management. Although these groups are relatively small, they reflect areas where further educational reinforcement and clarification are needed.

Despite these variations, the relatively high percentage of respondents in the high knowledge category indicates a consistent level of understanding among students. Overall, the findings suggest that fourth-year nursing students generally possess a high level of knowledge regarding nutritional management in diabetes mellitus. However, targeted interventions may still be necessary to address minor knowledge gaps, consistent with existing literature emphasizing the importance of continuous education and training in improving diabetes care competency. The classification of knowledge levels was based on Bloom's taxonomy, as presented in Table 1a.

Table 1a.

Distribution of respondents according to the knowledge toward nutritional management in Diabetes Mellitus (n = 222)

	Correct f (%)	Incorrect f (%)	Correct answer
Diabetes patients should eat a balanced diet.	218 (98.2)	4 (1.8)	Yes
A diabetic diet is calculated based on carbohydrates, proteins and fats.	213 (95.95)	9 (4.05)	Yes
Exercise plays an important role in the prevention and management of diabetes.	213 (95.95)	9 (4.05)	Yes

Non-fat or low-fat milk contains less fat and fewer calories than whole milk.	210 (94.59)	12 (5.41)	Yes
Trans-fats increase LDL cholesterol levels.	202 (90.99)	20 (9.01)	Yes
Cholesterol should be restricted to 300 mg daily for diabetes patients.	196 (88.29)	26 (11.71)	Yes
Symptomatic hypoglycemia could be treated using 3–4 cubes of sugar.	194 (87.39)	28 (12.61)	Yes
50–60% of the daily caloric intake of diabetics should come from carbohydrates.	176 (79.28)	46 (20.72)	Yes
The total amount of carbohydrates is more important than the type of carbohydrate.	168 (75.68)	54 (24.32)	Yes
Diabetes is related to hypertension.	160 (72.07)	62 (27.93)	Yes
Only carbohydrates have to be restricted for diabetic patients.	135 (60.81)	87 (39.19)	No
Diabetes is caused by high sugar intake.	88 (39.64)	134 (60.36)	No
Overall m(sd)		9.39/12 (1.3)	

A questionnaire assessing knowledge of nutritional management in diabetes revealed that 83.33% of fourth-year nursing students demonstrated a high level of understanding, indicating strong competence in key aspects of diabetes care. Meanwhile, 14.41% had moderate knowledge, suggesting a need for additional instruction in certain areas, and 2.25% scored low, highlighting the requirement for further reinforcement. Overall, the findings indicate that students generally possess a high level of knowledge, consistent with previous studies reporting that Filipino nursing students and nurses demonstrate strong understanding of basic diabetes concepts and care (Balolong et al., 2021; Hernandez et al., 2022). The classification of knowledge levels was based on Bloom's cut-off points (Bloom, 1956), as summarized in Table 1b.

Table 1b.

Distribution of respondents according to the overall knowledge level (n = 222)

Score range	Knowledge level	Frequency (f)	Percentage (%)
<7 (<60%)	Poor Knowledge	5	2.25
8-9 (60%-80%)	Moderate Knowledge	32	14.41
10-12 (80%-100%)	High Knowledge	185	83.33
Total		222	100

Level of Attitude of Fourth-Year Nursing Students regarding Nutritional Management in Diabetes Mellitus

A Likert scale questionnaire assessed fourth-year nursing students' attitudes toward nutritional management in diabetes mellitus. Table 3a shows that students generally hold a favorable disposition toward the topic, with an overall mean score of 3.39 out of 4, indicating a positive attitude. High mean scores were observed for statements regarding patient education and awareness of diabetic diet (M = 3.54), calculation and interpretation of body mass index (BMI) upon admission (M = 3.52), and promotion of diabetic diet awareness among patients (M = 3.54). Similarly, students exhibited positive attitudes

toward the nurse's role in nutritional assessment, patient education, and lifestyle modification, with mean scores ranging from 3.42 to 3.49. Conversely, the statement suggesting that nutritional care is solely the responsibility of the hospital nutritionist received a comparatively lower mean score (M = 3.11), reflecting the students' perception of nutritional management as a collaborative effort among healthcare professionals.

Table 2a.
Distribution of respondents according to the attitudes toward nutritional management in Diabetes Mellitus (n = 222)

	Mean	Standard Deviation
I believe that all patients with diabetes should be aware of their diabetic diet	3.54	0.66
I believe that body mass index (BMI) of patients with diabetes should be calculated and interpreted at the time of admission to the ward.	3.52	0.63
I believe that all patients with diabetes should try to control their blood sugar by modifying their lifestyle to reduce complications.	3.52	0.69
I believe that diet is important in controlling blood sugar for all patients with diabetes.	3.51	0.72
I believe that obese patients with diabetes are more prone to diabetes complications than normal weight patients.	3.50	0.68
I believe that educating patients with diabetes about the importance of a diabetic diet is one of the responsibilities of nurses.	3.49	0.65
I believe that nutrition, diet, weight control, and increased activity are the basis of diabetes control	3.48	0.69
I believe that nurses and other members of the health care team should be aware of nutritional therapy and patient support that require nutritional and lifestyle modifications.	3.48	0.68
I believe that the nurse plays an important role in strengthening the patient's and family's understanding of the diabetic diet.	3.48	0.71
I believe that the nurse should evaluate the effectiveness of nutritional interventions in patients with diabetes.	3.46	0.66
I believe that the nurse plays an important role in informing the nutritionist and patients' understanding of the diabetic diet.	3.42	0.67
I believe that in order to monitor the nutritional status of patients with diabetes, nurses should monitor the work of nurse assistants in helping patients with nutrition.	3.36	0.68
I believe that initial nutritional assessment of patients with diabetes is one of the responsibilities of nurses.	3.34	0.64
I believe that nutritional care of hospitalized patients with diabetes is the sole responsibility of the hospital's nutritionist	3.11	0.86
I believe that initial nutritional evaluation is not necessary for all patients with hospitalized diabetes.	2.70	1.08
Overall	3.39/4	0.58

Table 2b presents the overall attitude levels. Findings revealed that 70.27% of respondents were classified as having a positive attitude, 26.58% as neutral, and only 3.15% as poor. These results indicate that most fourth-year nursing students view nutritional management

in diabetes favorably, consistent with the Knowledge, Attitudes, and Practices (KAP) framework, which emphasizes the influence of attitudes on health-related behaviors (Launiala, 2009). The classification of attitude levels was based on Bloom's cut-off points (Bloom, 1956). Prior studies also highlight the importance of positive attitudes in supporting patient education and diabetes care (Yu et al., 2022; Trani et al., 2024).

Table 2b

Distribution of respondents according to the overall attitude level (n = 222)

Score Range	Attitude	Frequency (f)	Percentage (%)
<35 (<60%)	Poor Attitude	6	3.15
36-47 (60%-79%)	Neutral Attitude	49	26.58
40-60 (80%-100%)	Positive Attitude	167	70.27
Total		222	100

Level of Practice of Fourth-Year Nursing Students Regarding Nutritional Management in Diabetes Mellitus

A Likert scale questionnaire assessed fourth-year nursing students' practices in managing nutrition for patients with diabetes mellitus. As shown in Table 4a, respondents generally exhibited good practices, with an overall mean score of 3.36 out of 4. Students scored particularly high in monitoring patients' nutritional needs (M = 3.45), teaching patients and their families about the diabetic diet (M = 3.44), and providing oral discharge instructions (M = 3.42). They also demonstrated strong practices in assessing patients' nutritional needs (M = 3.38), preparing and adjusting nursing care plans (M = 3.41), and coordinating with physicians and nutritionists for nutritional advice (M = 3.42), highlighting their understanding of comprehensive patient evaluation and interdisciplinary collaboration.

Some indicators received slightly lower mean scores, including calculating and interpreting Body Mass Index (BMI) (M = 3.28), providing written discharge instructions (M = 3.31), and following up with nutritionists regarding patients' nutritional status (M = 3.32), suggesting areas where additional clinical exposure and reinforcement may enhance consistency and confidence.

Table 3a.

Distribution of respondents according to the practices toward nutritional management in Diabetes Mellitus (n = 222)

	Mean	Standard Deviation
I monitor the nutritional needs of patients with diabetes in a variety of ways (for example, after insulin injections / oral antidiabetic medications, I visit the patient to make sure he or she has eaten the food)	3.45	0.68

In order to strengthen the understanding of patients with diabetes and their families, I teach them about the diabetic diet.	3.44	0.73
Based on the results of the patient's initial assessment, I will inform the treating physician that the patient has diabetes to seek nutritional advice.	3.42	0.68
At the time of discharge of a patient with diabetes, I provide oral instructions to patients/their families on nutrition and diabetic diet.	3.42	0.70
I prepare and adjust a nursing care plan for each patient with diabetes based on primary and secondary information.	3.41	0.77
During the initial assessment of the patient, I ask his or her companion about recent weight loss or gain	3.39	0.72
I assess the nutritional needs of patients with diabetes using the nurse's admission assessment sheet	3.38	0.67
I record the discharge training provided for the diabetic diet in the patient education form.	3.36	0.73
I evaluate the effectiveness of nutritional training provided to patients with diabetes in various ways, including the teach-back method, test results, and so on	3.33	0.74
I make nursing diagnoses related to the nutrition of patients with diabetes and record them in the nurse report sheet for follow-up.	3.32	0.76
In the ward, I monitor that the type and amount of food required by patients with diabetes are in accordance with the diet set by the nutrition consultant, and if the patient wishes to change the type or amount of food, I coordinate with the nutritionist.	3.32	0.74
I follow up on informing the nutritionist about the patient's nutritional status and conducting nutrition counseling.	3.32	0.77
During the rounds/visits, I discuss the nutritional status of my diabetic patients	3.32	0.79
At the time of discharge of a patient with diabetes, I provide written information to patients/their families about nutrition and the diabetic diets.	3.31	0.78
I calculate and interpret the body mass index (BMI) of a patient with diabetes	3.28	0.72
Overall	3.36/4	0.73

Overall practice levels, presented in Table 3b, show that 76.13% of respondents demonstrated good practice, 20.72% moderate practice, and only 3.15% poor practice. These results indicate that most students are able to apply appropriate nutritional management practices for diabetes, while a minority may require further guidance. These findings are consistent with previous studies reporting that higher diabetes knowledge is associated with better self-management practices among nursing students (Salazar & Magday, 2023; Almazan et al., 2021). The classification of practice levels was based on Bloom's cut-off points (Bloom, 1956).

Table 3b.

Distribution of respondents according to the overall practices level

Score Range	Practice. Level	Frequency (f)	Percentage (%)

<35 (<60%)	Poor Practice	8	3.15
36-47 (60%-79%)	Moderate Practice	58	20.72
48-60 (80%-100%)	Good Practice	156	76.13
Total		222	100%

Relationship between Knowledge and Attitudes, Practices and Attitudes, Knowledge and Practices of Nutritional Management in Diabetes Mellitus among Fourth-Year Nursing Students

The relationship between knowledge and attitude regarding nutritional management among fourth-year nursing students was examined using Spearman's rho correlation. The analysis revealed a weak positive correlation ($\rho = 0.153$, $p = 0.000$), indicating a statistically significant relationship. This suggests that students with higher levels of knowledge tend to exhibit more positive attitudes toward nutritional management in diabetes mellitus.

Although the correlation is statistically significant, the coefficient is close to zero, indicating a weak strength of association. This implies that while knowledge may influence students' attitudes, other factors such as clinical experience, personal beliefs, and exposure to patient education may also contribute to shaping their attitudes. These findings support posits that knowledge can shape beliefs and perceptions that influence health-related behaviors (Launiala, 2009), as presented in table 4.

Table 4.

Spearman rho and p-value results for Relationship Between Knowledge and Attitudes of Nutritional Management in Diabetes Mellitus among Fourth-Year Nursing Students

	Attitude	
	rs value	p-value
Knowledge	0.153	0.000

Relationship Between Attitude and Practices Regarding Nutritional Management in Diabetes Mellitus

The relationship between attitude and practices regarding nutritional management among fourth-year nursing students was examined using Spearman's rho correlation. The analysis revealed a positive correlation ($\rho = 0.241$, $p = 0.000$), indicating a statistically significant relationship. This suggests that students with more positive attitudes toward nutritional management tend to adopt better practices in clinical settings.

Although the correlation is statistically significant, the coefficient indicates a weak to moderate strength of association. This implies that while attitude can influence the adoption of appropriate practices, other factors such as clinical exposure, supervision, and knowledge may also play a role in shaping students' behaviors. These findings are consistent with Alshammari et al. (2020), who reported that nursing students with favorable attitudes demonstrated better health-related behaviors and greater readiness to manage patients with diabetes.

Table 5.

Spearman rho and p-value results for Relationship Between Practices and Attitude of Nutritional Management in Diabetes Mellitus among Fourth-Year Nursing Students

	Attitude	
	rs value	p-value
Practices	0.241	0.000

Relationship Between Knowledge and Practices Regarding Nutritional Management in Diabetes Mellitus

The relationship between knowledge and practices regarding nutritional management among fourth-year nursing students was examined using Spearman's rho correlation. The analysis revealed no statistically significant relationship ($\rho = 0.006$, $p = 0.934$), indicating that knowledge alone does not directly translate into better clinical practices.

The negligible correlation suggests that while knowledge is necessary, it may not be sufficient to influence practice without the involvement of other factors, such as attitude, motivation, confidence, and access to clinical resources. These findings are consistent with previous studies reporting that knowledge must be complemented by practical skills, behavioral readiness, and supportive learning environments to improve the application of clinical practices (Saeed et al., 2022; Almazan et al., 2021).

Table 6.

Spearman rho and p-value results for Relationship Between Knowledge and Practices of Nutritional Management in Diabetes Mellitus among Fourth-Year Nursing Students

	Practices	
	rs value	p-value
Knowledge	0.006	0.934

4. CONCLUSION

Based on the objectives and findings of the study, it can be concluded that fourth-year nursing students generally possess adequate knowledge, positive attitudes, and acceptable practices toward the nutritional management of diabetes mellitus, indicating a satisfactory level of preparedness in supporting patient care. The study revealed a significant relationship between knowledge and attitude, as well as between attitude and practice, suggesting that increased knowledge helps develop positive attitudes, which in turn influence clinical practices. However, no significant relationship was found between knowledge and practice, implying that knowledge alone does not always translate into proper application in real-life settings. These findings highlight the importance of strengthening practical training and clinical exposure to bridge the gap between theory and practice. Nevertheless, the results are limited to respondents from a single institution and may not be generalized to a wider population.

5. RECOMMENDATION

In view of the findings and conclusions of the study, it is recommended that nursing educators enhance their teaching strategies by incorporating more comprehensive, practical, and simulation-based learning experiences focused on the nutritional management of diabetes mellitus. These strategies may include case-based discussions, return demonstrations, and clinical simulations that allow students to apply theoretical knowledge in realistic scenarios. College administrators may consider strengthening the nursing curriculum by integrating competency-based approaches and ensuring the availability of adequate resources, such as updated learning materials, laboratory facilities, and access to clinical training sites that support skill development in diabetes care. Clinical instructors are encouraged to provide closer supervision, consistent feedback, and effective mentorship during clinical exposures to ensure that students are properly guided in applying appropriate nutritional management practices for patients with diabetes mellitus.

Furthermore, nursing students are encouraged to take an active role in their learning by improving their time management, participating in professional development activities, and seeking guidance from instructors and experienced healthcare professionals to enhance their clinical competence. Healthcare institutions may also contribute by offering continuous training programs, workshops, and seminars that focus on diabetes education, nutritional counseling, and patient-centered care, thereby reinforcing students' knowledge and skills. Future researchers are recommended to address the limitations of this study by including larger and more diverse samples from different academic institutions and healthcare settings, as well as exploring additional variables such as clinical exposure, institutional support, training opportunities, and personal factors that may influence students' knowledge, attitudes, and practices. Through these combined efforts, nursing education and clinical training can be further improved to better prepare future nurses in delivering effective, evidence-based nutritional management for patients with diabetes mellitus.

COMPETING INTERESTS

The authors declare that they have no conflicts of interest in relation to this study.

CONSENT

All authors confirm that informed consent was obtained from the participants prior to data collection.

ETHICAL APPROVAL

The study was reviewed and approved by the Iloilo Doctors' College Institutional Research Ethics Committee (IDIREC) prior to its conduct, ensuring that all ethical standards in research involving human participants were strictly followed.

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