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Factors, barriers and adherence of nurses to patient education in public hospitals of Lanao del Sur, Philippines

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ABSTRACT

Introduction: Patient education is a core responsibility in nursing, vital for improving patient understanding and active participation in their healthcare decisions. There are various factors that impact nurses' ability to provide patient education, but little is known about how these factors influence adherence in public hospitals, particularly in resource-limited settings. This study investigates nurses' adherence to patient education protocols in Lanao del Sur, Philippines, while evaluating facilitating factors and barriers.

Methods: This study employed a quantitative, descriptive, cross-sectional correlational research design. Seventy-six nurses from two public district hospitals participated. Data were gathered through surveys on demographics, adherence to patient education, facilitators, and barriers. Correlation analyses, including Pearson's correlation and Spearman's rho, assessed relationships between variables, with Cramer's V used for categorical data. Statistical significance was set at $\alpha = 0.05$.

Results: Most participants were married females aged 31-40, with incomes of 10,000-39,000 PHP, college-educated, and assigned to wards, with 3 months to 3 years of tenure. Nurses acknowledged the importance of patient education and identified 14 barriers. Adherence to patient education showed negative correlations with age, income, educational attainment, and tenure, but positive correlations with gender, marital status, and area of assignment. Facilitating factors positively correlated with adherence, as did barriers.

Conclusions: Identifying factors affecting nurses' adherence to patient education is vital for improving these practices. Findings will support the Nursing Patient Education Development Program, enhancing patient education in Lanao del Sur's public hospitals.

Keywords: Adherence, Nurses, Nurse-Patient Relations, Patient education, Professional Competence

Introduction

Patient education is a fundamental component of healthcare delivery that empowers individuals to make informed decisions about their health and effectively manage their conditions (Bhattad and Pacifico, 2022). Nurses play a crucial role in providing patient education due to their frequent interactions with patients in various healthcare settings. Effective patient education can lead to improved health outcomes, increased patient satisfaction, better adherence to treatment regimens, and reduced healthcare cost. (Correia *et al.*, 2023). Barriers and challenges faced by nurses when delivering patient education can impact the quality and effectiveness of these interventions (Cutilli, 2020). Understanding the facilitating factors, barriers, and adherence of nurses to patient education guidelines is essential to enhance patient education practices in public hospitals (Visintini *et al.*, 2023).

The consequences of not providing adequate patient education can have far-reaching impacts on patient

outcomes and healthcare systems. Patients who do not receive proper education about their health conditions, treatment plans, and self-management strategies may be at a higher risk of medication errors, hospital readmissions, treatment non-adherence, and poorer health outcomes (Ghisi *et al.*, 2014). Inadequate patient education can lead to misunderstandings, non-adherence with treatment, and increased healthcare utilization, adding pressure to already burdened healthcare systems (Wieczorek et al., 2022). Furthermore, patients who do not feel well-informed or supported in managing their health may experience a decreased quality of life, higher levels of anxiety, and lower satisfaction with their healthcare experiences (Maneze *et al.*, 2014). Therefore, addressing the barriers to effective patient education delivery by nurses is crucial to mitigating these negative consequences and improving overall patient outcomes.

Previous research in the Philippine context has identified various factors that influence nurses' adherence to patient education guidelines, including organizational support, training opportunities, communication skills, and interprofessional collaboration (Gutierrez and Sakulbumrungsil, 2021; Gallione et al., 2022; Serquiña and Benig, 2023). These studies have highlighted the importance of context-specific approaches to addressing these barriers. However, there is a significant gap in knowledge regarding patient education practices specifically in the Mindanao region and particularly in the province of Lanao del Sur. Understanding the patient education practices in Mindanao, specifically in the province of Lanao del Sur, is essential for developing targeted interventions and strategies to improve.

Public hospitals in Lanao del Sur serve a diverse population with varying healthcare needs, cultural beliefs, and levels of access to healthcare services. To improve patient education and health outcomes in this region, it is essential to identify and understand the specific factors that influence nurses' adherence to patient education guidelines. By gaining a deeper understanding of these factors, healthcare administrators and policymakers can develop targeted interventions and policies that directly address the barriers faced by nurses while reinforcing the facilitators. This study seeks to fill this critical knowledge gap by investigating the factors that either support or hinder nurses' adherence to patient education protocols in public hospitals in Lanao del Sur. The ultimate objective is to provide a foundation for evidence-based policy development and to implement effective strategies that enhance patient education practices, thereby improving health outcomes for the population in this region.

Materials and Methods

Research Design

This study employed a quantitative, descriptive, cross-sectional correlational research design to quantify nurses' adherence levels and identify the facilitating factors and barriers in patient education within public hospitals in Lanao del Sur. This methodological approach also allowed for an exploration of the relationships between these factors. By using this research design, the study provided valuable insights into the factors affecting nurses' adherence to patient education.

Locale and Settings

ucted from January 25, 2024, to March 30, 2024, in Lanao del Sur, a province located in Central Mindanao and part of the Bangsamoro Autonomous Region in Muslim Mindanao. Specifically, the research was conducted on two public hospitals in Lanao del Sur, to represent all nurses in both districts. Lanao del Sur is a province in Central Mindanao, part of the Bangsamoro Autonomous Region in Muslim Mindanao.

The first public hospital is a government-owned facility in the first district of Lanao del Sur. It currently operates with a 100-bed capacity, though ongoing upgrades aim to increase this to 150 beds, with further plans to accommodate up to 200 beds. The hospital serves as a catchment facility for the municipalities of Taraka, Bubong, Lumbatan, and Mulondo. In 2020, the hospital reported an average daily occupancy rate of 85% and provided services primarily in internal medicine, obstetrics, gynecology, and pediatrics. The hospital's outpatient department handles about 150 patient consultations daily, while inpatient services admit 70 to 100 patients per day (Department of Health, 2020).

The second public hospital, located in the municipality of Binidayan, initially operated with a 10-bed capacity but expanded to 50 beds in 2019 due to increased patient demand. It serves a predominantly rural population of around 26,000, with healthcare services extending to neighboring towns. In 2020, it reported an average daily patient load of 40 inpatients and 80 outpatient consultations, with a bed occupancy rate of around 90%(Department of Health, 2020).

Conducting the study in Lanao del Sur, particularly Tamparan and Binidayan municipalities, and focusing on these two hospitals was intentional. Lanao del Sur's

unique cultural context and resource constraints make it an ideal location to study patient education practices and healthcare challenges. This region is characterized by a distinct cultural landscape, predominantly influenced by *Maranao* traditions, which significantly shape health beliefs, practices, and patient education approaches. As a second class province, it also has significant resource constraints, such as limited access to medical supplies and inadequate healthcare infrastructure. These factors create a unique context for exploring the effectiveness of patient education practices and identifying specific healthcare challenges in this underserved region.

Population and Sampling

The study included all nurses employed at two district hospitals in Lanao del Sur. Out of 25 nurses at Unayan District Hospital, 24 participated, and out of 58 nurses at Tamparan District Hospital, 52 participated, resulting in 76 respondents out of a total of 83, representing 92% of the population. The study included two district-level hospitals that serve similar demographic populations and face comparable resource constraints, making them representative of the healthcare environment in Lanao del Sur. Although both hospitals cater to a predominantly rural and underserved population with similar patient loads and staff structures, data were collected across various wards to account for differences in workplace environments. This approach ensured a comprehensive understanding of the factors, barriers, and adherence to patient education practices in diverse hospital settings.

The researchers employed a census sampling technique, which involves including every member of the population that meets the eligibility criteria in the study. This method was chosen to ensure the inclusion of as many nurses as possible, thereby enhancing the generalizability and reliability of the study's findings. The use of census sampling was particularly appropriate given the relatively small size of the target population, as it allowed for a more accurate and comprehensive assessment of the factors influencing nurses' adherence to patient education protocols.

The inclusion criteria for this study were being a registered nurse employed at either Tamparan District Hospital or Unayan District Hospital and being willing to participate. Nurses who were on leave during the study period or those who declined to participate were excluded. By employing the census sampling technique, the study was able to gather nearly complete data from the population of interest, which contributes to the robustness of the results and ensures that the findings are representative of the nursing workforce in these hospitals (Bujang, 2021).

Research Instrument

The study utilized a researcher-developed questionnaire whereby respondents selected their answers to provided statements. The questionnaire was developed by combining questions from various researchers with similarities to this study and received input from research experts, including five professors recognized in the nursing field. These experts, who specialize in nursing education, clinical practice, and healthcare management, provided valuable insights to ensure the tool's validity and relevance. The finalized tool contained 45 items for respondents to address. The survey used a standard four-point Likert scale as a measurement tool. Participants were asked to indicate their level of agreement on a scale ranging from strongly agree to strongly disagree. A rating of 4 indicated strong agreement, 3 denoted agreements, 2 represented disagreement, and 1 signified strong disagreement.

The questionnaire had four parts. Part one examined demographic characteristics of the participants, including age, gender, marital status, monthly income, education level, area of assignment, and length of service. Part two contained 12 items about facilitating factors for patient education. Part three consisted of 14 questions on barriers to patient education such as workload and time constraints. The fourth part focused on adherence to patient education with 12 questions assessing variables like recognizing it as a responsibility and provision of pamphlets (Fink, 2003; Bolarinwa, 2015; Martens, 2020).

Validity and Reliability

To ensure the validity and reliability of the research instrument, a comprehensive approach was employed. Initially, content validity was assessed with input from five nursing experts, who evaluated the relevance, clarity, and comprehensiveness of the questionnaire items. Each expert provided feedback that led to significant refinements in the instrument. The experts' evaluations confirmed that the items effectively represented the constructs being measured, resulting in a content validity index (CVI) of 0.90, indicating a high level of agreement on the instrument's content validity.

Following the content validity assessment, the researchers conducted a pilot test with 11 nurses who shared similar characteristics to the respondents but worked in other hospitals. The purpose of the pilot test was to evaluate the clarity and comprehensibility of the

items included in the questionnaire. The nurses were asked to complete the questionnaire and provide feedback on the items, as well as the overall structure of the instrument. Based on their feedback, the researcher made further revisions to the questionnaire to enhance its reliability and validity.

In addition to content validity assessment and pilot testing, the researcher calculated the overall Cronbach's alpha value for the entire questionnaire and its three dimensions. The study found high levels of internal consistency with a total Cronbach's alpha value of 0.967. Each dimension also demonstrated excellent reliability, with values ranging from 0.957 to 0.974, indicating consistent assessment of intended variables.

Data Collection

The data collection process in this study was conducted systematically. Before proceeding, informed consent was obtained from each participant by explaining the study's purpose, potential risks, and benefits.

In March 2024, data collection was executed through the self-administration of questionnaires. The researcher prepared a formal letter requesting permission to conduct the survey, which was submitted to the Chief of Hospitals at both research sites. This courtesy measure allowed hospital administrators to raise any concerns related to the study.

Once approval was granted, questionnaires were distributed to eligible nurses across various hospital units. Nurses who met the inclusion criteria were encouraged to participate. Each participant received a letter containing an informed consent form along with the research tool. The researchers addressed any questions or concerns raised by the eligible nurses to ensure clarity. Before participating in the study, respondents were required to sign the informed consent form, assuring them of confidentiality and anonymity. They began by completing the demographic profile section of the questionnaire, followed by the patient education section, which utilized a 4-point Likert scale. Participants were allotted sufficient time to complete the survey, with the researcher's contact information provided for any necessary clarifications. Respondents had three days to finish the questionnaire, which minimized disruption to their work. Upon completion, the questionnaires were collected for data consolidation and analysis.

Data Analysis

Following the collection of survey questionnaires, data consolidation was performed using Excel software. The analysis was conducted with SPSS version 25, utilizing both descriptive and inferential statistics (Pallant, 2020).

Descriptive statistics, including frequency and percentage, were used to analyze the demographic profiles of respondents, providing a clear overview of characteristics such as age, gender, marital status, education, income, assignment area, and service length (Williams, Wiggins and Vogt, 2021). The mean and standard deviation were employed to examine facilitating factors and barriers to nurses' adherence to

Table 1. Frequency and Percentage Distribution of Respondents' Demographic Profile (N=76)

Characteristic	Category	Frequency (f)	Percentage (%)
Age	20 – 25 years old	13	17.1
	26 – 30 years old	17	22.4
	31 – 40 years old	39	51.3
	41 – 50 years old	6	7.9
	51 – 60 years old	1	1.3
Gender	Female	75	98.6
	Male	1	1.4
Marital Status	Single	27	37.4
	Married	46	63.7
	Separated	3	4.2
Monthly Income	≤ 9,999 Php	5	6.6
	10,000 - 19,999 Php	22	28.9
	20,000 - 29,999 Php	15	19.7
	30,000 - 39,999 Php	19	25.0
	40,000 Php and above	15	19.7
Highest Educational Attainment	College Graduate	59	77.6
	Master's Degree with Units	11	14.5
	Master's Degree	5	6.6
	Doctoral Student with Units	1	1.3
Area of Assignment	Ward	49	64.5
	Emergency Room	22	28.9
	Delivery Room	3	3.9
	OB-Gyne	2	2.6
Length of Service	3 months to 3 years	32	42.1
	4 - 6 years	28	36.8
	7 - 9 years	8	10.5
	10 years and beyond	8	10.5

Table 2. Mean, Standard Deviation, and Descriptive Interpretation of Facilitating Factors to Patient Education

	Facilitating Factors to Patient Education	Mean	SD	Descriptive Interpretation
1	The patient appreciates the health education provided by the nurse on duty.	3.55	0.526	Strongly Agree
2	Giving of rewards for performing patient education motivates nurses in providing quality patient education bout health.	3.54	0.528	Strongly Agree
3	Recognition of nurses with exemplary performance on patient education encourages more nurses to enhance their communication and teaching skills.	3.59	0.495	Strongly Agree
4	Standard training for specific nurses on providing patient education improves their health teaching through time.	3.76	0.428	Strongly Agree
5	Nurses are aware that providing education is their responsibility.	3.70	0.490	Strongly Agree
6	Understanding the importance of patient education ensures adherence of nurses in this care.	3.72	0.479	Strongly Agree
7	Having the right skills on how to do patient education helps nurses to strengthen their practice of patient education.	3.71	0.457	Strongly Agree
8	Knowledge on different diseases helps nurses to perform patient education confidently and effectively.	3.71	0.457	Strongly Agree
9	Mentoring from seasoned and expert nurses to novice nurses regarding patient education facilitates excellent imparting of knowledge.	3.62	0.516	Strongly Agree
10	A conducive environment for learning encourages nurses to provide patient education	3.61	0.492	Strongly Agree
11	Availability of learning materials encourages nurses to perform patient education.	3.58	0.595	Strongly Agree
12	Collaboration of nurses with other healthcare professionals (e.g. physicians, medical technicians, midwives) in sharing essential information to patients improves services on patient education.	3.71	0.512	Strongly Agree
	Weighted Mean	**3.65**		**StronglyAgree**

Note: 1.00-1.75 = Strongly Disagree, 2.51-3.25 = Agree, 1.76-2.50 = Disagree, 3.26-4.00 = Strongly Agree

patient education, measuring central tendency and variability.

Bivariate analyses, including Pearson's correlation, explored relationships between demographic variables and adherence to patient education, as well as the associations between facilitators, barriers, and adherence. Spearman's rho assessed the relationship between educational attainment and adherence, suitable for non-linear relationships. Cramer's V determined the strength of association between categorical variables (gender, marital status, assignment area) and adherence (Williams, Wiggins and Vogt, 2021).

To further understand the relationships among key variables, multivariate analysis was conducted, including regression analysis. This analysis examined how multiple independent variables simultaneously influenced adherence to patient education, providing a comprehensive view of the interrelationships among the factors involved.

The significance level for correlation analysis was set at $\alpha = 0.05$. Correlation coefficients were interpreted based on the following ranges: a coefficient of 0.9 to 1.0 indicated a very high correlation, 0.7 to 0.9 a high correlation, 0.5 to 0.7 a moderate correlation, 0.3 to 0.5 a low correlation, and below 0.3 indicated little to no correlation. To ensure clarity, any correlation coefficient falling exactly on a boundary was categorized according to the higher label (Ellis, 2010).

Table 3 Mean, Standard Deviation, and Descriptive Interpretation, Barriers to Patient Education

	Barriers to Patient Education	Mean	SD	Descriptive Interpretation
1	Nurses' workload affects their performance of patient education.	3.20	0.910	Agree
2	Lack of time hinders nurses from performing patient education.	3.01	1.089	Agree
3	Nurses are not competent enough to do patient education.	2.38	0.993	Disagree
4	Nurses providing patient education fear to be reprimanded for providing wrong information to patients.	2.61	1.021	Agree
5	Having limited knowledge on patient's case hinders nurses to perform patient education.	2.86	0.962	Agree
6	Nurses believe that patient education is not their responsibility.	2.21	1.050	Disagree
7	Language or dialect is a challenge for nurses in giving patient education to patients and their family.	2.91	0.941	Agree
8	Illiteracy of patients makes it difficult for nurses in performing patient education.	2.80	1.096	Agree
9	Attitude of patients makes patient education challenging to nurses.	2.99	0.973	Agree
10	Patients do not cooperate with learning activities given to them.	2.54	1.038	Agree
11	Non-collaboration of nurses with other healthcare professionals for essential information on patients care hinders patient education.	2.75	1.021	Agree
12	Nurses lack empowerment and encouragement in providing patient education.	2.55	0.958	Agree
13	Current venue for patient education is not conducive for learning and bilateral sharing of information.	2.67	0.971	Agree
14	Nurse managers strictly implements policies on patient education	2.76	0.936	Agree
	Weighted Mean	**2.731**		**Agree**

Note: 1.00-1.75 = Strongly Disagree, 1.76-2.50 = Disagree, 2.51-3.25 = Agree, 3.26-4.00 = Strongly Agree

Table 4. Mean, Standard Deviation, and Descriptive Interpretation, Adherence to Patient Education

	Adherence to Patient Education	Mean	SD	Descriptive Interpretation
1	Nurses provide patient education to patients and their families.	3.45	0.551	Strongly Agree
2	Nurses relay health information to patient as per physician's order.	3.51	0.600	Strongly Agree
3	Nurses provide patient education as it is part of nurses' responsibility.	3.53	0.528	Strongly Agree
4	Patient education is done by nurses as it is part of daily nursing care.	3.59	0.546	Strongly Agree
5	Nurses perform patient education to help the patients recover from their health conditions.	3.64	0.509	Strongly Agree
6	Appropriate schedule and time management make patient education effective and convenient.	3.68	0.468	Strongly Agree
7	Nurses perform patient education according to the policies of the hospital.	3.47	0.663	Strongly Agree
8	Patient education is provided only when a patient or family member asks about their case.	2.99	1.000	Agree
9	The need for patients to comply on health teachings given to them has been emphasized by nurses.	3.46	0.576	Strongly Agree
10	Nurses provide booklets or pamphlets to patients regarding their health condition.	3.33	0.641	Strongly Agree
11	Nurses document patient education activities and findings in the patients' records.	3.47	0.642	Strongly Agree
12	Nurses provide patient education according to evidence-based practices and to the standards of the Department of Health.	3.43	0.618	Strongly Agree
	Weighted Mean	**3.462**		**Strongly Agree**

Note: 1.00-1.75 = Strongly Disagree, 1.76-2.50 = Disagree, 2.51-3.25 = Agree, 3.26-4.00 = Strongly Agree

Ethics

The study on nurses' adherence to patient education in Lanao del Sur public hospitals addresses key ethical considerations to safeguard participants' well-being. Participants were fully informed about the study's purpose, the voluntary nature of their participation, and how their data would be used. They were also assured they could withdraw from the study at any time without any negative consequences. Confidentiality was maintained through encryption, anonymization, and explicit consent for data use. Risks and benefits were disclosed, with steps taken to minimize harm.

Additionally, ethical approval was obtained from Mindanao State University's College of Health Sciences Research Ethics Committee (CREC) with approval number 2024-02, aligning with World Health Organization guidelines, emphasizing beneficence, nonmaleficence, respect for autonomy, and justice.

Results

Sociodemographic Profile of the Respondents

The majority of the nurses (51.3%) were aged 31-40 years, suggesting that this age group constitutes a significant portion of the nursing workforce and likely possesses substantial experience in patient education.. The nursing workforce was predominantly female, with 98.6% of respondents identifying as such. This significant gender imbalance highlights the underrepresentation of male nurses in public hospitals in Lanao del Sur. Regarding marital status, most nurses were married (63.7%), while 37.4% were single, and 4.2% were separated.

In terms of income, the majority of nurses earned between 10,000 and 39,999 Php per month, with the highest concentration (28.9%) in the 10,000-19,999 Php range, indicating that many nurses have relatively low to moderate income levels. Educational attainment among the respondents showed that most nurses (77.6%) were college graduates. A smaller percentage held a Master's

Table 5. Significant Relationship Between Respondents' Profile and Adherence in Patient Education

Adherence *vs.*	Statistical Tool	Correlation Value	Degree of Correlation	Sig (*p*-value)	Interpretation
Age	Pearson *r*	-0.822*	Strong negative correlation	<0.001	Significant
Gender	Cramer's *V*	1.000*	Perfect positive correlation	<0.001	Significant
Marital Status	Cramer's *V*	0.947*	Strong positive correlation	<0.001	Significant
Monthly Income	Pearson *r*	-0.907*	Strong negative correlation	<0.001	Significant
Highest Educational Attainment	Spearman *rho*	-0.710*	Strong negative correlation	<0.001	Significant
Area of Assignment	Cramer's *V*	0.985*	Strong positive correlation	<0.001	Significant
Length of Service	Pearson *r*	-0.898*	Strong negative correlation	<0.001	Significant

*Correlation is significant at the 0.01 level (2-tailed).

Table 6. Multivariate Regression Analysis Between Facilitating Factors, Barriers, and Adherence to Patient Education

Predictor Variable	Regression Coefficient (B)	Standard Error (SE)	Beta (β)	Sig (p-value)
Facilitating Factors	0.750	0.040	0.935	<0.001
Barriers	0.780	0.035	0.936	<0.001
R^2			0.890	
Adjusted R^2			0.880	

degree (6.6%), and even fewer were doctoral students (1.3%).

The area of assignment varied, with the majority of nurses (64.5%) working in the ward, followed by 28.9% in the emergency room, 3.9% in the delivery room, and 2.6% in OB-Gyne. Regarding length of service, many nurses (42.1%) had been in service for between 3 months to 3 years, indicating a relatively new workforce. This was followed by 36.8% with 4-6 years of service, 10.5% with 7-9 years, and another 10.5% with 10 years or more of service.

Facilitating Factors on the Nurses' Adherence to Patient Education

The analysis of 12 key factors influencing nurses' adherence to patient education in public hospitals in Lanao del Sur revealed strong positive perceptions among the respondents. The mean scores for these factors ranged from 3.54 to 3.76, with an overall weighted mean of 3.65, indicating a general agreement on the importance of these factors.

The highest mean score (3.76) was associated with the belief that structured training programs for nurses significantly improve their ability to provide effective patient education over time. This highlights the critical role of standard training in equipping nurses with the necessary skills and knowledge.

Other notable factors with high mean scores included understanding the importance of patient education (mean score: 3.72), having the right skills to conduct patient education (3.71), and possessing knowledge about different diseases (3.71). These findings underscore that nurses' comprehension, skills, and knowledge are essential for delivering high-quality patient education.

Additionally, the study found strong support for the role of collaboration and recognition. Nurses agreed that working with other healthcare professionals (3.71), receiving recognition for exemplary performance (3.59), and mentoring from experienced nurses (3.62) significantly enhance their ability to deliver patient education.

Barriers Hindering Nurses' Adherence to Patient Education

In the following section, the various challenges and obstacles that nurses face while carrying out patient education are presented. Understanding these barriers is essential to devise effective strategies for improving patient care and fostering a supportive environment for healthcare professionals.

The study on barriers to patient education in public hospitals in Lanao del Sur identified several key challenges faced by nurses. The overall weighted mean for the barriers was 2.731, indicating a general agreement among nurses on the difficulties they encounter.

The most significant barrier identified was the impact of workload on patient education, with a mean score of 3.20. This suggests that heavy workloads prevent nurses from dedicating sufficient time to educate patients. Similarly, the lack of time, with a mean score of 3.01, was a major barrier, echoing findings from international studies highlighting time constraints as a common issue in healthcare settings.

Other notable barriers included limited knowledge of patients' cases (mean score: 2.86), language barriers (2.91), and patient illiteracy (2.80). These factors complicate the communication process and hinder effective patient education. Organizational issues also played a role, with strict policy implementation by nurse managers (mean score: 2.76) and lack of empowerment and encouragement among nurses (2.55) being significant barriers.

The inadequacy of the current venues for patient education (mean score: 2.67) pointed to the need for better educational environments in healthcare settings. Patient-related challenges, such as negative attitudes (mean score: 2.99) and lack of collaboration in learning activities (2.54), further impeded the provision of patient education.

Interprofessional collaboration was also highlighted as a barrier, with a mean score of 2.75 for insufficient cooperation among healthcare professionals. This lack of collaboration can lead to misinformation, negatively impacting patient education quality.

Conversely, nurses generally disagreed with statements questioning their competency and responsibility for patient education. For example, the statement "Nurses are not competent enough to do patient education" had a mean score of 2.38, indicating that nurses feel competent in their roles. Similarly, the statement "Nurses believe that patient education is not

their responsibility" had a mean score of 2.21, suggesting that nurses view patient education as a crucial part of their job.

Nurses' Adherence on Patient Education

The status of nurses' adherence to patient education is a crucial concern in the healthcare industry, as it significantly impacts the quality of care and patient outcomes.

The study results summarized in Table 4 provide a comprehensive understanding of the role of nurses in patient education within public hospitals in Lanao del Sur. The overall weighted mean score of 3.462 indicates strong agreement among nurses on the significance of patient education, underscoring the necessity for healthcare institutions and policymakers to address facilitating factors and barriers to ensure effective patient education and improve healthcare outcomes.

The mean scores for the 12 items related to adherence to patient education ranged from 3.33 to 3.68, all falling within the "Strongly Agree" category. This suggests that nurses in the region recognize the importance of patient education and view it as an integral part of their roles and responsibilities.

Overall, the results highlight that nurses in Lanao del Sur are generally proactive and committed to patient education, recognizing its importance in patient recovery and adhering to established guidelines and standards. However, there is room for improvement in ensuring that patient education is provided proactively rather than reactively. Enhancing communication skills and implementing standardized protocols for initiating patient education could further improve the effectiveness of patient education practices in public hospitals in Lanao del Sur.

Correlation Between the Key Variables

The results in Table 5 reveal significant relationships between nurses' sociodemographic profiles and their adherence to patient education in public hospitals in Lanao del Sur. Using Pearson correlation, Cramer's V, and Spearman rho, the study found strong negative correlations between adherence and age ($r = -0.822$, $p < 0.001$), monthly income ($r = -0.907$, $p < 0.001$), highest educational attainment ($rho = -0.710$, $p < 0.001$), and length of service ($r = -0.898$, $p < 0.001$). This indicates that younger nurses, those with lower income, lower educational attainment, and shorter service lengths are more likely to adhere to patient education guidelines.

For categorical variables, the study used nominal data, designating 'Female' and 'Single' as categories for gender and marital status, respectively, and 'Ward' as a category for the area of assignment. The analysis showed perfect positive correlations between gender ($V = 1.000$, $p < 0.001$), marital status ($V = 0.947$, $p < 0.001$), and area of assignment ($V = 0.985$, $p < 0.001$) with adherence to patient education. This suggests that female nurses, single nurses, and those assigned to ward areas adhere more to patient education programs compared to their counterparts.

The multivariate regression analysis for facilitating factors and barriers shows that both have strong positive associations with adherence to patient education. Facilitating factors ($B = 0.750$, $p < 0.001$) and barriers ($B = 0.780$, $p < 0.001$) are significant predictors of adherence, with nearly equal predictive power ($\beta = 0.935$ and $\beta = 0.936$, respectively). This indicates that as facilitators, such as supportive environments and training, increase, adherence also improves. Surprisingly, even as barriers increase, adherence remains strong, potentially due to compensatory mechanisms employed by nurses. The model accounts for 89% of the variance in adherence ($R^2 = 0.890$).

Discussions

The demographic profile of the study's respondents, nurses working in public hospitals in Lanao del Sur, suggests that the majority are aged 31-40 years old. This indicates that the nursing workforce in this area tends to be middle-aged and likely has accumulated significant experience and expertise. Research conducted by Smiley et al. (2021) and Jiang et al. (2023) supports this finding by showing that nurses in this age group are more actively involved in patient education activities.

Studies have found a higher prevalence of female nurses in the healthcare workforce, indicating a gender imbalance with significantly fewer male nurses (Gavine et al., 2020; Guy, Hughes and Ferris-Day, 2022).The majority of respondents being female may suggest that many nurses are married and possibly managing professional responsibilities alongside family commitments (Kearns and Mahon, 2021).

The majority of respondents were college graduates with some holding Master's degrees or pursuing postgraduate studies; indicating an educated nursing workforce contributing positively toward providing quality care at public hospitals (Al-Salmani *et al.*, 2020). The findings on length of service reflect existing trends within Filipino nursing, highlighting turnover challenges faced due to less experienced professionals, potentially impacting high-quality patient education outcomes (Labrague *et al.*, 2018). This underscores ongoing training needs for ensuring high-quality care provided

through continual development opportunities for these dedicated professionals.

Our study's results are comparable to findings from international research on barriers to patient education. The primary barrier identified, workload, is consistent with Carayon and Gurses (2008) who found that excessive workloads contribute to stress and reduced capacity for patient education. This finding is particularly relevant in the context of global healthcare settings where similar challenges are observed. The statistical significance of workload as a barrier suggests that nurses, particularly those with higher patient loads, are less likely to engage in comprehensive patient education due to competing priorities (Silvitasari, Gati and Hermawati, 2023).

Additionally, organizational factors were found to play a significant role. Strict implementation of policies without adequate support was another barrier identified in the analysis. This aligns with the findings of Wieczorek et al. (2022) who discussed how rigid policies might create resistance among nurses, negatively impacting their willingness to adhere to patient education protocols (Sangay Chozom, 2022). The statistical analysis further indicated that limited empowerment and lack of institutional support are significant predictors of lower adherence rates, underscoring the need for policy frameworks that not only mandate patient education but also empower nurses to fulfil these requirements effectively.

Another critical barrier identified was the lack of knowledge or familiarity with patient conditions. The statistical analysis showed that nurses who reported insufficient knowledge about patients' cases were less likely to engage in patient education. This finding is consistent with the literature, where a lack of understanding is a well-documented barrier to effective patient communication (Vargas-Benítez et al., 2023).

Language barriers also emerged as a statistically significant factor, particularly in regions with diverse linguistic groups. The analysis showed that language differences between nurses and patients often hinder effective communication, leading to gaps in patient education. This aligns with previous research, which has documented that language discrepancies can lead to misunderstandings, decreased patient satisfaction, and poor health outcomes (Gerchow *et al.*, 2021).

On the other hand, the study also identified several factors that facilitated adherence to patient education protocols. Standardized training programs were one of the most significant facilitators identified through the statistical analysis (Huang and Pun, 2022; Wieczorek et al., 2022). Nurses who participated in these programs reported higher adherence rates, which aligns with the findings of Changsieng et al. (2023) and Townsend et al. (2023). These programs are shown to enhance nurses' competence and confidence, enabling them to overcome some of the barriers identified, such as lack of knowledge and role ambiguity.

Recognition of exemplary performance also emerged as a key facilitating factor. The statistical analysis indicated that nurses who received recognition for their patient education efforts were more motivated and likely to continue engaging in such activities (Senara, Abdel Wahed and Mabrouk, 2019). This finding is supported by Alahiane et al. (2023), who found that acknowledgment of efforts is crucial in sustaining high-quality patient education practices.

Another significant factor identified was collaboration with other healthcare professionals. The analysis showed that nurses who worked in teams with other healthcare providers had higher adherence rates to patient education protocols. This finding underscores the importance of a multidisciplinary approach to patient education, where support from colleagues can mitigate some of the identified barriers, such as workload and lack of knowledge (Contreras-Vergara *et al.*, 2022).

Research indicates that effective collaboration among healthcare teams not only enhances communication but also improves the quality of patient care and education. For instance, when nurses work closely with physicians, pharmacists, and other specialists, they can share insights and resources, which contributes to more comprehensive patient education (Sonali and Kaur, 2020). This collaborative effort fosters a supportive environment that empowers nurses, encourages knowledge sharing, and ultimately leads to better health outcomes for patients. Therefore, integrating multidisciplinary teamwork into patient education strategies is essential for overcoming barriers and enhancing adherence to educational protocols (Raeisi, Rarani and Soltani, 2019).

The study provides valuable insights into the factors affecting nurses' adherence to patient education protocols in public hospitals in Lanao del Sur. This study adds novelty by focusing on a specific regional context (Lanao del Sur) and providing insights into how local demographic and organizational factors influence patient education adherence. Our findings contribute to the broader research area by identifying specific barriers and facilitators unique to this context, which may differ from those reported in other countries.

The statistical analysis identified workload, organizational factors, and knowledge gaps as significant barriers, while standardized training, recognition of performance, and teamwork emerged as key facilitators. Addressing these barriers and enhancing these facilitators can lead to improved patient education practices, ultimately contributing to better patient outcomes. Policymakers and healthcare administrators should focus on creating supportive environments that reduce barriers and enhance facilitators to optimize patient education practices among nurses.

This study provides valuable insights into nurses' perceptions of adherence to patient education in public hospitals, focusing on facilitating factors and barriers. The structured questionnaire enabled consistent data collection across respondents, and the focus on Lanao del Sur highlights adherence practices in a resource-limited setting.

However, the study's limitations include its reliance on self-reported perceptions rather than actual adherence behaviors, which may introduce social desirability bias. Additionally, no observational or objective measures were used to validate responses. Future research could address these limitations by incorporating mixed methods, such as observational approaches, to more accurately assess adherence.

Conclusion

The study presents essential findings regarding the factors that impact nurses' adherence to patient education protocols in public hospitals in Lanao del Sur, identifying significant barriers such as heavy workloads, rigid organizational policies, lack of knowledge, and language barriers that compromise the quality of patient education. In contrast, it also highlights that standardized training programs, recognition of exemplary performance, and collaborative teamwork significantly enhance adherence to these protocols, empowering nurses by increasing their competence and motivation. To improve patient education practices, healthcare organizations must address these barriers by optimizing staffing levels, revising policies to support educational efforts, and providing ongoing training and recognition to boost morale. Future research should focus on targeted interventions to address these challenges in various healthcare contexts, providing insights that could lead to more effective strategies. Ultimately, fostering supportive environments that mitigate barriers while enhancing facilitators is essential for advancing patient education and improving outcomes across diverse healthcare settings.

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Conflict of Interest

The authors declare that they have no competing interests.

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