



THE KNOWLEDGE AND PRATICE ABOUT NUTRITIONAL CARE PATIENTS OF NURSES AT THAI NGUYEN NATIONAL HOSPITAL AND SOME RELATED FACTORS

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ABSTRACT

Background: Nutrition is a key element of health promotion and contributes to the management and prevention of many diseases. In all cases, nurses must be willing to provide medical advice, and certain patients are eager to hear a nurse's advice regarding. **Objective:** To describe the knowledge and practice of nutritional care of nurses at Thai Nguyen National Hospital in 2023 and analyze some related factors. **Methods:** A cross-sectional quantitative study design was conducted to find factors associated with knowledge' s nutrition of nurses working at hospitals. The study was conducted from January to December, 2023. **Results:** The total number of responses was 165. The number of Nurses who participated in the questionnaire was 165 (100%). The group of nurses under 40 years old had higher nursing care knowledge than the group of nurses more than 40 years old (82.8% and 75.0%); Female nurses have higher nursing care knowledge than male nurses (84.7% and 70.6%). The Surgical Nurses group has higher nursing care knowledge than the Internal Medicine Nurses group (87.5% and 78.9%) and the education level of nurses was non affected by knowledge practical of nutritional care for patients ($p>0.05$). There was a statistically significant difference in the number of patients cared for in 1 day related to nutritional care knowledge with $t=3.33$, $p=0.001$. **Conclusion:** Research results show that the average number of patients cared for per month is related to the knowledge and practice of nutritional care for patients. Therefore, it is necessary to adjust and properly distribute human resources in clinical departments with a large number of patients so that nurses can have time to practice nutritional care for patients better.

Keywords: Knowledge; Practice; Nutritional care; Nurses; Thai Nguyen National Hospital

INTRODUCTION

Nutrition care is a very important role in comprehensive human development. Illness is one of the direct causes of nutritional deficiencies, and conversely, nutritional deficiencies increase morbidity, lengthen treatment days, and increase rates of complications and death. For seriously ill people, this relationship becomes more important than ever. Nutritional deficiency is a cause of death accompanied by respiratory and digestive diseases, v.v...¹⁻³. Nurses in hospitals are considered the main force that directly cares for patients. Who had an important role in the process of patient recovery. According to the regulations in Circular No. 07/2011/TT-BYT, Circular 08/201/TT-BYT of the Ministry of Health on guiding nursing practical and patient care in hospitals, the care and monitoring of patients are the hospital's duty^{4,5}. Nursing process care and monitoring activities are performed and responsible by nurses and Caregivers. Thai Nguyen General Hospital is a central hospital in Thai Nguyen province to support the medical examination and treatment needs of people in the Northern mountainous. Nursing work at Thai Nguyen National Hospital is always highly appreciated in patient care and recovery in many fields. However, there has not been any research that specifically evaluates the functions and tasks of nurses in nutritional care. The question is what factors have impacted the nutritional care of nurses here? To answer the above question, we conducted this study with the objective of identifying some factors that influenced the practical knowledge of nutritional care for patients of nurses in the clinical departments at Thai Nguyen Central Hospital in 2023. The results of the study will provide more evidence for managers to have appropriate plans and solutions to improve nurses' knowledge about nutritional care for patients, thereby improving the quality of medical care to patient satisfaction.

METHODS

Participant, time and location of study

The study was conducted from January to September, 2023, in 27 Departments of Thai Nguyen National Hospital.

Study population: Nurses who were on the duty during data collection time and who fulfilled the inclusion criteria were our study population.

Inclusion criteria and exclusion criteria: Those nurses who were present during the study period and volunteer to participate in the study were included whereas those did not available (annual leave, maternal leave) during the study period were excluded from the study. Participants gave up during the research process.

Methods

Study design: A cross-sectional study.

Sample size and sampling procedure:

$$n = Z^2_{(1-\alpha/2)} \frac{p(1-p)}{d^2}$$

Sample size (n) was determined based on a single proportion formula with the following research at the National Lung Hospital (p=0.7).

The level of confidence (α) was taken at 0.05 ($Z^2_{(1-\alpha/2)} = 1.96$).

The margin of error was taken as 0.05. The final sample size (nf) of this study was 165.

Sampling procedure: The number of study units to be sampled from 27 each Department was determined using the proportion to size allocation formula. Lists of nurses were taken from each unit of hospitals and simple random sampling was used to select respondents from each Department of the Thai Nguyen General Hospitals.

Content in research

General information about research subjects includes Age group, gender, education level, specialty, number of on-call sessions/month, average number of care patients/day, and participation in nursing care classes. Nutritional care for patients, participation in medical care networks.

Information on some factors related to the knowledge of nutritional care for patients of nurses with the above characteristics.

The questionnaire and methods of data collection

Data collection questionnaire:

The self-completed questionnaire consists of 2 parts:

- Part 1: includes personal information such as age, gender, department of work, number of on-call sessions per month, number of patients cared for during the day, highest educational degree, once trained on nutrition for patients.
- Part 2: question set is based on Circular 31/2021/TT-BYT regulating nursing activities in hospitals issued by the Minister of Health, effective from February 27, 2022⁷ and improved based on Boaz et al. (2013)⁸ questionnaire survey on nurses about nutritional counseling for patients in hospitals. Includes Nutritional knowledge about nutrition for patients (3 questions); Knowledge about assessing nutritional status for patients (4 questions); and Knowledge about the patient's current diet (3 questions). Each correct choice receives 1 point, incorrect choice receives 0 points. The total score of knowledge groups is a maximum of 10 points. Knowledge of nurses is classified as follows by WHO:

Number of correct answers	Classification
8 - 10 sentences	Adequate
< 8 questions	Inadequate

The method of data collection:

Make a list and names of nurses in clinical departments.

The research team will go to the departments as assigned and explain to the Head Nurse about the research objectives and ask for cooperation and support in data collection.

The researcher explained the research objectives and invited nurses in the departments to participate. If the operator agrees, they will be sent a link to answer the questions on the Google software.

Research participants are only allowed to answer once for the set of questions sent via the link according to the pre-designed question set.

Process and analyze data: Data were processed and analyzed using SPSS 23.0 software.

Descriptive statistics: Calculated by frequency, and percentage and presented in table and graph form.

Statistical analysis: Use χ^2 and OR test at a 5% significance level, 95% confidence interval (CI) to measure the difference in the relationships of research results.

P value <0.05 is considered a statistically significant difference.

Research ethics: The research does not violate medical ethics because this research does not affect the health or psychology of research participants. The research requires the consent of the research subject and ensures confidentiality for the informant. The interview questions are not related to sensitive issues such as religion, politics, or culture.

The study was conducted with the consent of the Board of Directors of Thai Nguyen National Hospital. The research protocol was approved by the ethics committee of the Thai Nguyen University of Medicine and Pharmacy.

RESULTS

Table 1. Socio-demographic characteristics of the respondents (n=165)

Variables	Categories	n	%
Age (years)	≤ 40	145	87.9
	> 40	20	12.1
	($X \pm SD$)	35.27 \pm 4.38	
Gender	Male	34	20.6
	Female	131	79.4
	Rate Male/Female:	1/3.85	
Medical Specialties	Internal Medicine	109	66.1
	Surgery	56	33.9
Educational Level	Intermediate level	12	7.3
	Colleges level	121	73.3
	Bachelors level	32	19.4
To join the nutrition network	Yes	46	27.9
	No	119	72.1
Nutrition training	Yes	76	46.1
	No	89	53.9

There were documents/ handouts or nutritional counseling processes in Department	Yes	101	61.2
	No	64	38.8

The average age in the study was 35.27 ± 4.38 years old, most of the caregivers were female, 79.4%. 66.1% of nurses belong to Internal Medicine specialties, and only 7.3% of nurses have intermediate degrees. 72.1% of nurses have joined the nutrition network, but only 46.1% of nurses have participated in training/education on nutritional care for patients (Table 1).

Table 2. Number of night shifts per month, number of patients cared for/day

Variable	Mean	SD	Min	Max
Number of night shifts per month	4.90	2.20	1	10
Number of patients cared for per day	12.95	11.29	2	60

The nurses had an average of 4.90 ± 2.20 night shifts per month. Each day the nurse takes care of an average of 12.95 ± 11.29 patients (Table 2).

Table 3. Bivariate and multivariate analysis of factors affecting knowledge of practice Nutrition for patients of the Nurse (n=165)

Variables		Knowledge of practice Nutrition				OR	p-value
						95%CI	
		Adequate		Inadequate			
		n	%	n	%		
Age (years)	≤ 40	120	82.8	25	17.2	0.62	0.39
	> 40	15	75.0	5	25.0	(0.20 - 1.87)	
Gender	Male	24	70.6	10	29.4	2.31	0.57
	Female	111	84.7	20	15.3	(0.96 - 5.56)	
Medical Specialti-es	Internal	86	78.9	23	21.1	1.87	0.17
	Surgery	49	87.5	7	12.5	(0.75 - 4.67)	

Educational Level	Intermediate level	10	83.3	2	16.7	1	
	Colleges level	101	83.5	20	16.5	1.01 (0.20 - 4.96)	0.99
	Bachelors level	24	75.0	8	25.0	0.60 (0.11 - 3.33)	0.56

As shown in Table 3, The group of nurses under 40 years old had higher nursing care knowledge than the group of nurses more than 40 years old (82.8% and 75.0%), however, the difference was not statistically significant with $p>0.05$. Female nurses have higher nursing care knowledge than male nurses (84.7% and 70.6%). However, the difference is not statistically significant with $p>0.05$. The Surgical Nurses group has higher nursing care knowledge than the Internal Medicine Nurses group (87.5% and 78.9%). However, the difference is not statistically significant with $p>0.05$. The education level of nurses was non affected by knowledge of nutritional care for patients ($p>0.05$).

Table 4. Bivariate analysis of factors affecting knowledge of practice Nutrition for patients of the Nurses

Variables		Knowledge of practice Nutrition				OR 95%CI	p-value
		Adequate		Inadequate			
		n	%	n	%		
Nutrition training	Yes	34	73.9	2	16.7	1.98	0.10
	No	24	75.0	8	25.0	(0.86 - 4.53)	
There were documents/ handouts or nutritional counseling processes in Department	Yes	58	76.3	18	23.7	1.99	0.09
	No	77	86.5	12	13.5	(0.88 - 4.46)	

The difference was not statistically significant in nurses' knowledge of practical nutritional care for patients, who have

joined the nutritional care network and participated in training/training on nutritional care and nutritional care knowledge of nurses ($p>0.05$) (Table 4).

Table 5. Bivariate analysis of factors affecting knowledge of practice Nutrition for patients of the Nurses

Variables	Knowledge of practice Nutrition				p - value
	Adequate		Inadequate		
	X	SD	X	SD	
Number of night shifts per month	5.04	2.18	4.30	2.23	t=1.68; p=0.94
Number of patients cared for per day	13.71	12.24	9.53	3.73	t=3.33; p=0.001

There was a statistically significant difference in the number of patients cared for in 1 day related to nutritional care knowledge with $t=3.33, p=0.001$ (Table 5).

DISCUSSION

The group of nurses under 40 years old had higher nursing care knowledge than the group of nurses higher 40 years old (82.8% and 75.0%). However, the difference was not statistically significant with $p>0.05$. Our research results are different from Le Thi Thanh Tam's research at City Class I Hospital. Ho Chi Minh⁹, the research of Phan Yen Anh¹, and the study of Hoang Khac Tuan Anh². This difference may be due to the age group in our study being mostly young nurses under 40 years, accounting for 87.9%, average age of 35.27 ± 4.38 years old. Thus, there was no difference in age group and knowledge of nutritional care for patients.

There were differences in the nature of the job. The rate of female nurses is the majority in our study (79.4%). Female nurses have higher nursing care Nutrition knowledge than male nurses (84.7% and 70.0%). However, the difference is not statistically significant with $p>0.05$. Our results are different from finding research of Le Thi Thanh Tam et al, who found a gender relationship between male and female nurses and the level of completion of nutritional care tasks for patients⁹.

Nutritional care knowledge was achieved in nurses with a university degree of 75%, a college degree of 84.5%, and an intermediate level of 83.3% (table 3). However, our study shows that educational level was not related to knowledge of nutritional care for patients ($p>0.05$). Our results are similar to the study of Chu Anh Van et al showing that educational level is not related to nutritional care knowledge¹⁰. However, this was different from the study of Duong Thi Binh Minh et al at Huu Nghi Hospital, which shows that the professional qualifications and seniority of nurses have an impact on nutritional care activities for patients and nurses¹¹. Intermediate-level and newly graduated nurses do not meet job requirements. The study of Nguyen Thi Hong Van et al showed that there was a relationship between educational level and nutritional care practices for patients ($OR=2.29$, $p=0.024<0.05$)⁶. Specifically, the group of nurses with university/postgraduate education achieved a 2.29 times higher level of practice than the group of nurses with Intermediate-level/College degrees. The results of our study show that the majority of nurses have college degrees, so there is no difference in the level of education and nutritional care of patients. In addition, the limitations of our study have not evaluated the seniority of the nurses, the type of labor contract of the nurses, and attitude, knowledge, and practical about nutritional care for patients.

Many studies have shown that job characteristics are one of the factors that have an important influence on the quality of care of nurses. Each nurse has to be on duty an average of 4.90 ± 2.20 times a month, and takes care of 12.95 ± 11.29 patients a day (table 2). There is a statistically significant difference in the number of patients cared for/day related to nutritional care knowledge with $t=3.33$, $p=0.001$ (table 5). Research results from Duong Thi Binh Minh and colleagues showed that 36.3% of nurses had to take care of 20 or more patients/day¹¹. The number of medical orders that must be carried out for each patient and the many drugs that must be administered by injection or intravenous infusion cause nurses to only focus on carrying out doctor's orders and have not enough time to do other care activities such as Nutritional care for patients, especially during the days off. The hospital should develop a standard protocol that is uniformly applied throughout

the hospital to limit unnecessary medication orders and reduce the work load of nurses so that nurses can have more time to take care of their patients' nutrition get better.

Participation in training and education on nutritional care has an impact on patients' nutritional care knowledge. However, our study did not find a statistically significant difference in participating in nutrition care networks, participating in nutrition care training and nutrition care knowledge of Nurses with $p > 0.05$. The results of Chu Anh Van's research are different from our research. The study shows that there was a statistically significant relationship between training factors, providing training materials, and leadership supervision, in collaboration with the Department of Nutrition and Nutritional Practice ($p < 0.05$)¹⁰. The different results are due to the two studies being conducted at two different times, which is explained by the fact that during the period 2015 - 2017, the hospital was implemented with the help of the Vietnam Nursing Association in coordination with the DoD PEPFAR Organization to pilot project on health education for patients and has developed a set of health education documents, trained more than 90% of nurses in the hospital in health education guidance and consulting skills, thereby helping improving the quality of health education for patients, and nutritional guidance and counseling is one of them.

CONCLUSIONS

Research results show that the average number of patients cared for per month is related to knowledge and practice of nutritional care for patients. Therefore, it is necessary to adjust and properly distribute human resources in clinical departments with a large number of patients so that nurses can have time to practice nutritional care for patients better.

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