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Research Article

Nutrition Services by Nurses: Gaps in Knowledge, Attitudes and Implementation - A Cross-sectional Investigation in Major Hospitals of Ethiopia

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Received: September 19, 2025; **Published:** October 06, 2025

Abstract

Background: Malnutrition is a critical global public health issue that significantly impacts individuals' health and quality of life. It leads to various complications, including impaired immune function, delayed wound healing, and increased morbidity and mortality rates. In healthcare settings, nurses play a vital role in addressing malnutrition through nutritional assessments and interventions. Despite their integral position, there is limited information regarding nurses' knowledge, attitudes, and practices (KAP) related to nutritional services in Ethiopia. Understanding these factors is essential for improving the quality of nutritional care provided to patients and enhancing health outcomes.

Methods: A cross-sectional study was conducted from March to May 2019, involving 422 randomly selected nurses from 13 hospitals across various regions of Ethiopia. Data were collected using a structured self-administered questionnaire that assessed sociodemographic factors, as well as knowledge, attitudes, and practices related to nutritional services. The collected data were analyzed using EPI Info 7 and SPSS version 20, employing descriptive statistics to summarize the findings.

Results: Out of the 422 nurses surveyed, 384 participated, resulting in a response rate of 90%. The demographic analysis revealed that the majority of participants were female (63.3%) and aged between 25 to 35 years. The findings indicated that 65.5% of nurses displayed adequate knowledge regarding nutritional services, while 69.2% exhibited a positive attitude towards these services. Furthermore, 66.8% of respondents reported engaging in good practices related to nutritional care. However, a notable portion of the participants (over 25%) demonstrated unfavorable levels of knowledge, attitudes, and practices, indicating a need for targeted interventions.

Conclusion: While a majority of nurses showed sufficient knowledge and positive attitudes toward nutritional services, significant gaps remain that could hinder the quality of care. Enhanced training and resources are essential to improve nurses' KAP, ultimately leading to better nutritional care for patients. Stakeholders should prioritize the integration of comprehensive nutritional education and support to ensure effective service delivery in health facilities.

Keywords: *Knowledge; Attitude; Practices; Nutrition Services; Nurses*

Abbreviations

FMOH: Federal Ministry of Health; NACS: Nutrition Assessment and Counseling Service; IRB: Institution Review Board

Introduction

Malnutrition is one of the major public health challenges causing a serious consequence in individuals' quality of life [1]. Nutritional services are one of the basic human rights. Nutritional care for patients is crucial since malnutrition results in impaired immune function, impaired wound healing, reduced muscle strength, and increased depression [2]. Providing appropriate nutritional service is one of the key responsibilities of health care providers. Because of their holistic role, Nurses are the primary caregivers to identify feeding difficulties, ascertain the patient's nutritional status, and prevent the risk that influences the patients' health outcomes [3]. The presence of adequate knowledge, practical skill, and a positive attitude towards the nutritional services of the patient can positively influence the practices of nutritional services like screening for which in turn have a great influence on decisions of a physician on the health outcome of the patient [4].

Hospitalized patients receive different kinds of drug therapy and costly medical and surgical interventions. On the contrary adequate nutritional service and support for patients is considered as a low-ranked type of treatment this can affects the patients' length of stay, increased the number of complications, and decrease patients' rate of rehabilitation [5]. In addition to this nurses' improved knowledge and skill with a positive attitude on nutritional services should be mandatory to perform appropriate case management and screening, administration of nutritional interventions and monitor the variety of food consumption of admitted patients; especially diets with high trans-fat and sugar [5].

The different finding has shown that insufficient knowledge, limited skill, and negative attitude towards nutritional interventions among nurses have been the main causes for inappropriate nutritional practice and delayed the healing process of patients [6]. However, there is a limited information regarding nureses level of knowledge, attitude and practice on nutrition service in our country.

Aim of the Study

The current study was aimed to fill the gap this problem by providing an up to date information about knowledge, attitude, and practice of nurses on nutrition service at public health facilities in Ethiopia.

Methods and Materials

Study design, period and setting

An institution-based cross-sectional study was conducted from March to May 2019. The assessment was conducted at 13 hospitals from different regions of Ethiopia, such as St. Paulo's hospital Millenium Medical College. St. Peter specialized hospital, Zewditu and Yekatit 12 Medical College, Ayder Teaching Hospital, Dubti Hospital, Hiwet Fana Teaching Hospital, Jigjiga Referral Hospital, Adama Referral Hospital, Gonder University Hospital, Gambela Referral, Hawassa Referral Hospital, Assosa Referral Hospital. In general the current data was collected from all regions and city administrations of the country.

Populations, inclusion and exclusion criteria

All nurses working at the selected hospitals were considered as a source population of the study. As well as all nurses working at the selected hospitals during the data collection times were considered as the study population. Those nurses who were working at the selected health facilities for the past six months were included in the study. Whereas, Nurses who have been working at administrative position and those who were not able to communicate were excluded from the study.

Samples size determination and sampling technique

The sample size was calculated by using single population proportion formula and proportional allocation was employed to distribute the sample depending on the number of each hospital population.

Assuming a Z- value of 1.96 at 95%CI and d of 5%. Where (n= sample size, p= prevalence, d= margin of error, Z = level of confidence $(1.96)^2$) and taking the prevalence (p) 50%.

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

(1.96x1.96)0.5 (1-0.5)/0.0025

384

Adding a 10% non-response rate, the final sample size of the study participant was 422.

The target 13 hospitals was selected purposively based on the research team discussion. Then the nurses in the selected hospitals were selected using a simple random sampling method by using list of nures from human resources of each hospitals as sampling frame. Based on the numbers of nurses of the hospitals, proportional allocation was used.

Study variables and operational definition

Knowledge, attitude, the practice of nutritional services at health facilities were our outcome variables. To meaure our variables, we used mean of the finding. And, those were scored the mean and above are considered as knowledgeable, favourable attitude and good practice, whereas in contrast to this those who scored below the mean as not knowledgable, unfavorable attitude and poor practice.

Data collection procedure, quality assurance and control plan and processing and analysis

The available data were collected using a structured self-administered questionnaire. The questionnaire assessed, some sociodemographic factors, knowledge, attitude, practices, roles, responsibilities, and training related to preventive and treatment of nutrition services in the health facility. These methods help in identifying existing gaps that affect the implementation of nutrition assessment, counseling, management skills, or knowledge of key nutrition. To maintain the quality of the data adoption and scrutiny of appropriate sampling methodologies for consistency and representativeness were used. Training and orientation of field research assistants to ensure familiarity with the objectives of the assessment, tools, and process was done. Besides, each survey team had a team lead to ensure compliance with survey protocol and procedures during the data collection process. After checking the data for completeness and consistency it was entered into EPI info 7 and exported into SPSS version 20 for analysis. After cleaning and coding the data, descriptive statistics were carried out and summarized in tables, texts, and charts.

Result

Data were collected from 384 nurses from selected 13 hospitals of Ethiopia making the response rate 90%. The majority 307 (80%) of the participants were BSc Nurses and most of the respondents were female 243 (63.3%) and 253 (65.9%) of the respondents have less than 5 years' work experience (Table 1).

Demographic characteristics of nurses to nutrition service at health facility (n = 384)			
Variables	**Description**	**Frequency**	**Percent**
Sex	Male	141	36.7
	Female	243	63.3
Profession	Clinical Nurse	33	8.6
	BSc Nurse	307	80
	Midwifery	44	11.5
Working department	Surgery	114	29.7
	Internal Medicine	128	33.3
	ICU	5	1.3
	Oncology	97	25.3
	Psychiatry	10	2.6
	Other	30	7.8
Age of respondents	Less 25 years	89	23.2
	25 to 30 years	182	47.4
	30 to 35 years	52	13.5
	35 to 40 years	28	7.3
	Above 40 years	33	8.6
Service years	Less than 5 years	253	65.9
	5 to 10 years	87	22.7
	Above 10 years	44	11.5

Table 1: *Demographic characteristics of nurses for the assessment of nutrition service at selected government hospital, Ethiopia, 2019.*

Attitude of nurses to nutrition service

The majority of nurses had a favorable attitude to nutrition service at the hospital 69.2% (95% CI; 64.5-74.1) while 30.8% (95% CI; 25.9-35.5) unfavorable attitude as shown in figure 1 below.

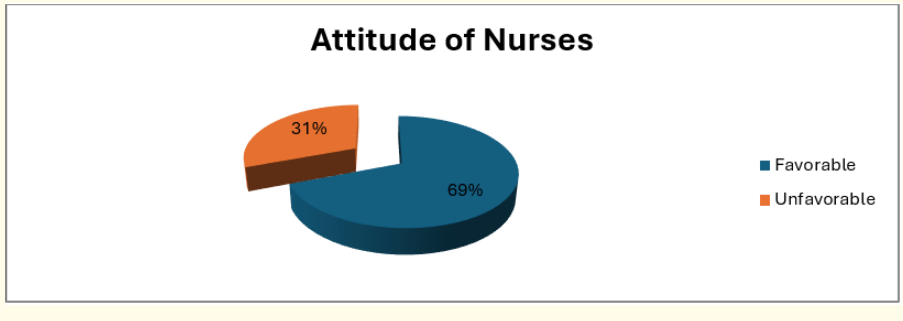

Figure 1: *Attitude of nurses to nutrition service at selected government hospital, 2019.*

Nurses level of attitude was assessed by using six item questions of agree and disagree alternatives as shown in table 2 below.

Item	Response	Frequency
An initial nutritional assessment is important in-patient care	Agree	372 (96.9)
	Disagree	12 (3.1)
Monitoring a patient's nutritional status is a basic component of nursing care	Agree	370 (96.4)
	Disagree	14 (3.6)
The nurse is responsible for notifying the attending physician if a patient does not eat a served meal	Agree	345 (89.8)
	Disagree	39 (10.2)
It is important to weigh patients upon admission	Agree	347 (90.4)
	Disagree	36 (9.4)
It is important to repeat the nutritional assessment every week of hospitalization	Agree	337 (87.5)
	Disagree	48 (12.5)
Nutritional assessment and monitoring by the nurses improve a patient's recovery	Agree	383 (99.7)

Table 2: *Description of attitude of nurse to nutrition service at government hospital, 2019.*

Level of nurse's knowledge about nutrition service in the hospital

According to this study finding 65.5% (95% CI; 60.4-70.2) of participants were knowledgeable even if 34.5% (95%CI; 29.8-39.6) of them were not knowledgeable as shown (Figure 2).

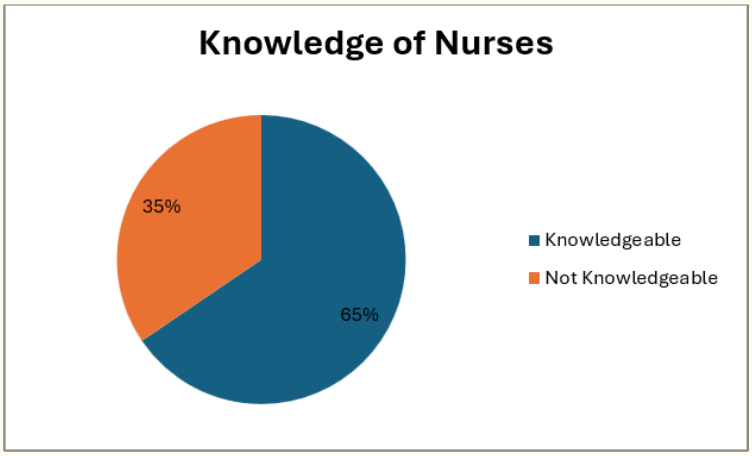

Figure 2: *Knowledge level of nurses to nutrition service at selected government hospital, 2019.*

With respect to response for the specific items of knowledge related questions just more than half of the study participants were mentioned disagree on all the ten questions (Table 3).

Nurses' knowledge about nutrition care			
Nurses should focus on the patient's primary diagnosis rather than on nutritional aspects	Agree	182	47.4
	Disagree	202	52.6
A patient who refuses to eat should not be forced to do so	Agree	253	65.9
	Disagree	131	34.1
The main reason why the patients don't eat hospital food is due to its appearance and taste	Agree	273	71.1
	Disagree	110	28.6
Nutritional support should be begun only once medical treatment has been completed	Agree	86	22.4
	Disagree	298	77.6
Nutritional support is resource-consuming and not a cost-effective investment	Agree	117	30.5
	Disagree	267	69.5
Nutritionist, rather than the nursing staff, are responsible for nutritional support	Agree	197	51.3
	Disagree	187	48.7
Parenteral nutrition should be avoided due to its complications	Agree	121	31.5
	Disagree	263	68.5
Obese patients (BMI > 30) are not at risk of malnutrition and should be fed as usual	Agree	69	18.0
	Disagree	313	81.5
A patient eating a meal should not be disturbed, even for medical treatment	Agree	259	67.4
	Disagree	122	31.8
Overweight patients with cancer will inevitably lose weight and need not be referred to a nutritionist	Agree	94	24.5
	Disagree	290	75.5

Table 3: *Knowledge of nurses to nutritional care of patients at selected government hospital, 2019.*

Practice of nutrition service in selected Ethiopian hospitals

As per the finding of this assessment 66.8% were practiced in the hospital nutrition service activities (95% CI; 62.2-71.2) while 33.2% (95% CI; 28.8-35) of them were not practiced. The mean of practice is 5 ± 2 as shown in figure 3 below.

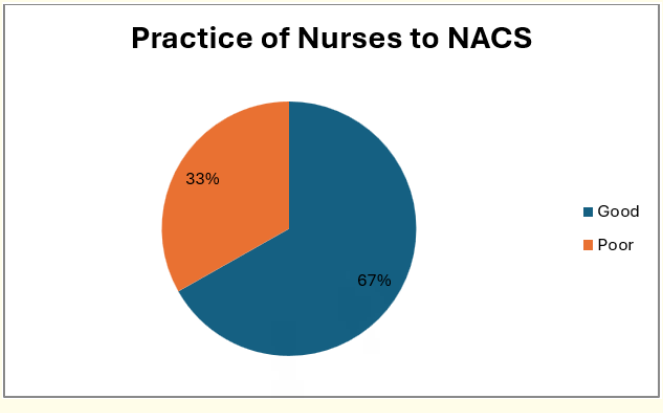

Figure 3: *Level of practice of nurses to NACS at selected government hospital, 2019.*

Nurses level of practice was assessed by using a yes/no based eight questions (Table 4) and the above result (Figure 3) was categorized based on the overall mean of these 8 questions as shown in table 4 below.

Nurses' evaluation of the quality of nutritional care (practice) in nurses 'ward		
Items	**Response**	**n (%)**
All patients receive nutritional care (Appetite test, anthropometric, clinical, dietary etc.)	Yes	152 (39.6)
No	232 (60.4)	
Our nursing staff monitors patients' nutritional status	Yes	195 (50.8)
No	189 (49.2)	
The nutritional assessment is performed methodically and professionally	Yes	211 (54.9)
No	171 (44.5)	
Physicians address nutritional aspects of patient care	Yes	233 (60.7)
No	151 (39.3)	
Patients receive their meals in an appropriate manner as per regulations	Yes	250 (65.1)
No	133 (34.6)	
Nurses are aware whether or not a patient has completed his meal	Yes	158 (41.1)
No	226 (58.9)	
Information on patients' nutritional status is effectively transmitted among health care staff	Yes	224 (58.3)
No	159 (41.4)	
I am satisfied with the level of nutritional care practice in ward	Yes	75 (19.5)
	No	308 (80.5)

Table 4: *Nutritional practice of nurses at selected government Hospital, 2019.*

Correlation between KAP

According to the current correlation analysis, there was positive as well as a very good correlation in between knowledge and attitudes (r = 0.99). Whereas, it little correlation between knowledge and practices (r = 0.08), and attitudes and practices (r = 0.137). Here, level practices and attitudes, as well as practice and attitude, show a significant correlation with a $p<0.05$ (Table 5).

Level	R	P-value
Knowledge-Attitude	0.99	0.00003
Knowledge-Practice	0.08	0.117
Practice-Attitude	-0.137	0.007

Table 5: *Correlation (Spearman's rho) among KAP-level of nurses at selected government hospital, 2019.*

N = 384; Correlation is significant at the 0.05 level (2-tailed) (P < 0.05).

Discussion

This study aimed to determine the current knowledge, attitude, and practice of nurses towards nutritional services give at health facilities. The findings of this study showed that more than half 69.2% of the nursing staff had a positive attitude toward the nutritional services in the health facilities. This result is higher than the studies done in Sweden (33%) [7], Australia (39.2%) [8]. The possible explanation for this discrepancy might be due to the difference in study settings and different sample size data collection procedures of the studies.

The result of this study revealed that almost all nurses 96.9% implied that initial nutritional assessment is mandatory while 12.5% responded that weekly nutritional assessment of patients during hospitalization was not as much important. In addition to this majority of nurses (90.4%) agreed that patients should be a weight upon admission. The health facilities nurses also indicated that Nutritional assessment and monitoring improves the patient's recovery.

Regarding knowledge of nurses toward nutritional services regarding the finding of this study, revealed that 65.5% of participants were knowledgeable. This result is lower than the study done in Kenya 74% [9]. This difference may be explained by the difference in education level and nutritional training received among the health care staff [10]. Whereas, the finding of this study is higher than the study done in Lebowa 35% [11]. This discrepancy might be explained by the difference in study settings, and data collection procedure, and taking of nutritional education courses.

The study also revealed that only 22.4% of Nurses agreed that nutritional support should be begun only once medical treatment has been completed. About 65.9% of respondents agreed that a patient who refuses to eat should not be forced to do so. In addition to this, about 48.7% of participants disagree with the idea that nutritionists rather than Nurses are responsible for the nutritional support of patients.

The study revealed that 66.8% of participants practice nutritional services at the health facilities. This study is in line with the study done in Canada (65.1%) [12]. The findings of this study also showed that only 39.6% of Nurses practice nutritional care; that is appetite tests, anthropometric, clinical, and dietary assessment for patients. A similar finding was also shown in Denmark (40%) [13]. On the contrary, lower results were also observed in Sweden (21%) and Norway (16%) [5]. Screening patients based on nutritional assessment will help identify those who are at risk and needs more attention [7]. Therefore, improving nurses' knowledge attitude, and practice towards nutritional care is mandatory for patients' fast recovery.

Strengths and Limitations

This study had several strengths: [1] this is the first study to assess knowledge, attitude, and practice of nurses to nutrition service at the health facility level; [14] the use of standard and validated tool to assess NACS service. Nevertheless, the current study had also some limitations: first, due to the cross-sectional nature of the study factors associated with knowledge, attitude and practice may not imply causality. Secondly, primary hospitals were not included in the study that might underestimate the finding. Lastly, the small number of samples needs to be considered in interpreting the findings.

Conclusion

Based on the finding of this study more than half of the nurses were found to have adequate knowledge, attitude, and practice regarding nutrition service in the hospital setting. However, more than one-fourth of the study participants had unfavourable level of knowledge, attitude and practice. Therefore, the respective body shall do the best thing to improve the nurses level of KAP on nutrition service by all health facilities.

Ethical Considerations

The study protocol (along with tools and consent form) was ensured from EPHI-IRB for its approval). The hospital administrator provided approval for the study and Nurses were provided informed consent before participating in the survey. Only those who consented took part in the study, with the freedom to discontinue participation at any time. The collected data were stored securely to protect personal information, and access to the confidential data was limited to core research team members. This report preserved the confidentiality of all personal identities.

Consent for Publication

Not applicable.

Availability of Data and Materials

Data will be available upon request from the corresponding authors.

Competing Interests

No conflict of interest

Funding Support

This research work was funded by Ethiopian Public Health Institute, Addis, and Ababa, Ethiopia.

Author's Contributions

SD Conceptualized the study and was involved in the study design, reviewed the article, analysis, report writing, discussion, and drafted the manuscript. BW was involved in the study design, data entry, and review of the subsequent drafts. STD, ZMA, and MAA were involved in the discussion of the overall document, and review of subsequent drafts. SD, ZMA and MAA involved reviewing the draft. All authors read and approved the final manuscript.

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Volume 20 Issue 2 October 2025