Knowledge of Dysphagia in Stroke among Nurses Working in Tertiary Care Hospital

Nepal GM,[1] Sherpa MD[2]

[1]Department of Physiotherapy

Kathmandu University School of Medical Sciences,

Dhulikhel, Nepal.

[2]Physiotherapist, Green City Hospital,

Basundhara, Nepal.

Corresponding Author

Govinda Mani Nepal

Department of Physiotherapy

Kathmandu University School of Medical Sciences,

Dhulikhel, Nepal.

E-mail: nepalgovinda42@gmail.com

ABSTRACT

Background

Swallowing difficulty occurs in up to 37 to 78% of people experiencing a non-fatal stroke. About one half of dysphagic patients either die or recover spontaneously within the first 14 days of stroke onset leaving half with swallowing deficits that can significantly impair function, recovery and quality of life. It is important for the nurses to efficiently screen dysphagia post-stroke to reduce the odds of negative outcomes.

Objective

To assess the level of knowledge of Dysphagia among nurses working in Tertiary care hospital and to assess the associations of knowledge with educational level, years of experience and experience in caring for stroke patient with dysphagia.

Method

Self-Administered Questionnaire developed by Andrea Pickle Voight (2015) was used to collect data among nurses working in Dhulikhel hospital. Descriptive statistics was used to assess the knowledge on dysphagia and chi-square was used to assess the association between the variables.

Result

We found that nurses have moderate knowledge in dysphagia (62.39%). Knowledge level was significantly associated with experience in caring for stoke patient (p = 0.033) but not associated with educational level (p= 0.366) and years of experience (p= 0.065).

Conclusion

Nurses at Dhulikhel Hospital have moderate knowledge of dysphagia in stroke. Level of knowledge was significantly associated with caring for stroke patient but not with years of experience and educational level.

KEY WORDS

Aspiration, Dysphagia, Knowledge, Nurses, Stroke

INTRODUCTION

Dysphagia is one of the most common impairments post-stroke which occurs in approximately 64-78% in acute phase and 40-81% in chronic phase of stroke patients.[1] It is an important cause of pneumonia and has been shown to be associated with malnutrition, dehydration and increased length of hospital stay with poor prognosis and reduced quality of life.[2-7]

Although dysphagia is highly prevalent condition, it is still neglected since the standard protocol for assessment has not been defined and remains undiagnosed with very poor standard of care.[1,8] Early diagnosis and effective management could minimize its consequences leading to better post stroke outcomes.[2]

Nurses are one of the important member of a team and plays vital role in caring for the patients with stroke having dysphagia.[5,9] They are the professionals involved for the acute care of the patient that can have greater impact in the recovery of a patient. Nurses with the knowledge of dysphagia can identify the problem in time, refer the patient for further diagnosis which leads to diminished risk of aspiration and malnutrition.[5,7]

A bedside test done by a nurse will help in early detection of dysphagia and can significantly reduce the risk of aspiration pneumonia and further complications including death.[2,5] Thus we conducted this study to assess the level of knowledge of dysphagia among nurses working in Dhulikhel Hospital.

METHODS

This is a descriptive cross-sectional study conducted in different departments of Dhulikhel Hospital that provide care to patients with stroke; i.e., Intensive Care Unit (ICU), Emergency Department, and Medicine ward. The data was collected between 12th June 2016 and 4th July 2016.

The study protocol was approved by Institutional Review Committee of Kathmandu University School of Medical Sciences, Dhulikhel, Nepal. Written consents were obtained from all the participants prior to data collection.

We included all the nurses working in the ICU, emergency department and medicine ward of Dhulikhel hospital with census sampling. The nurses who denied giving consent and participating in the study were excluded. After the screening for inclusion and exclusion criteria, 46 nurses agreed to participate in the study and signed the written consent.

We used "Knowledge of dysphagia questionnaire" which is a self-reported measure consisting of 30 closed ended questions on knowledge of dysphagia; knowledge on Signs and Symptoms (13 questions), knowledge on Complications (10 questions) and knowledge on Management (7 questions).[2] There are 3 options for each question:

Agree, Disagree and Unable to decide. The score of 1 was provided for correct answer and 0 for incorrect as well as unable to decide. The points of each section were then combined to obtain a total score. The level of knowledge was scored as; 75% and above was classified as 'high', 50% to 74% was classified as 'moderate' and 50% and below was classified as 'low'. It is a reliable and valid measure to assess knowledge of dysphagia in patients with stroke, with Intraclass correlation coefficient (ICC) for Section B1, Signs and Symptoms =0.716, for Section B2, Complications =0.704 and for Section B3, Management =0.714.[2] It is also sensitive to change after providing knowledge about dysphagia to the nurses.

Socio-demographic information was collected to describe the study participants. This included age, sex, qualification as a nurse, years of experience and ward of practice.

A research assistant who invited the nurses to participate in the study checked the forms for the completeness of the answers at the same time.

All the questionnaires were numerically coded and analyzed by using statistical package for social sciences (SPSS) 16.0 version.

Descriptive statistics including percentage was used to describe the demographic variables and level of knowledge. Chi-square test was used to assess association between the dependent variable (knowledge) and independent variables (Educational level, experience and cared for stroke patients with dysphagia). We considered a p value of less than 0.05 as statistically significant difference.

RESULTS

Demographic parameters of the patient are enlisted in table 1. Among 46 nurses, 73.91% were certificate level and 80.4% had less than 3 years of experience. Table 2 enlists the participants experience with stroke. Majority of the participants 43 (93.5%) had not received any formal training on eating and/swallowing difficulties in stroke patients.

Table 1. Socio-demographic characteristics.

Demographic variables	Characteristics	Frequency (n)	Percentage (%)
Age	≤22	23	50
	23-26	19	41.30
	27-30	3	6.52
	≥31	1	2.17
Qualification	Certificate	34	73.91
	Bachelor (Bsc and BN)	12	26.09
Years of Experience	0-3 years	37	80.4
	4 years and above	9	19.6
Ward of practice	Medicine	23	50
	ICU	14	30.4
	Emergency	9	19.6

Table 2. Participants experience with stroke

Variables	Characteristics	Percentage (%)
Have you ever cared for a patient who had a stroke?	Yes	41(89.1)
	No	5 (10.9)
Have you received training in nursing stroke patients?	Yes	0
	No	46 (100)
Have you ever cared for a stroke-patient with eating and/or swallowing difficulties?	Yes	31 (67.39)
	No	15 (32.60)
Have you received formal training on eating and/or swallowing difficulties in stroke Patients?	Yes	3 (6.5)
	No	43 (93.5)
Are you satisfied with your knowledge about eating and swallowing difficulties?	Yes	8 (17.4)
	No	38 (82.6)
Would you like to receive further formal training and information about eating and swallowing disorder in stroke patients?	Yes	46 (100)
	No	0

Further, 38 (82.6%) participants reported that they are not satisfied with their knowledge on dysphagia and all of the participants (100%) stated that they would like to receive further formal training on dysphagia in stroke patients. We found that the nurses had moderate knowledge in all the three categories with achieved percentage for signs and symptoms of 65.38%, complications of 63.69% and management of 54.96%.

The participant overall knowledge of dysphagia combining all 3 sections (signs and symptoms, complications, and management) was 62.39% demonstrating moderate level of knowledge.

There was no statistically significant association of the knowledge level with educational level (p=0.366) and years of experience (p=0.065) in nursing but we found statistically significant association between knowledge level and experience in care for stroke patient (p=0.033).

Table 3. Knowledge of nurses on dysphagia

Variables	Correct n (%)	Incorrect n (%)
Knowledge on signs and symptoms		
Coughing while eating	40 (87.0)	6 (13.0)
Skin irritations	28 (60.9)	18 (39.1)
Feeling of food getting stuck in the throat	44 (95.7)	2 (4.3)
Choking on saliva during non-meal times	38 (82.6)	8 (17.4)
Poor movement of the tongue	35 (76.1)	11 (23.9)
Food remains in the mouth	37 (80.4)	9 (19.6)
Poor chewing	35 (76.1)	11 (23.9)
Patients always cough if they aspirate	10 (21.7)	36 (78.3)
Difficulty closing lips	18 (39.1)	28 (60.9)
Weight loss	36 (78.3)	10 (21.7)
Frequent throat clearing after swallowing	19 (41.3)	27 (58.7)

Hoarse voice	28 (60.9)	18 (39.1)
Chest pain	23 (50.0)	23 (50.0)
Knowledge on complications		
Increased mortality	34 (73.9)	12 (26.1)
Pneumonia	39 (84.8)	7 (15.2)
Anaphylactic Shock	16 (34.8)	30 (65.2)
General weakness	41 (89.1)	5 (10.9)
Problems with digestion	8 (17.4)	38 (82.6)
Aspiration	45 (97.8)	1 (2.2)
Dehydration	40 (87.0)	6 (13.0)
Sudden heart attack	11 (23.9)	35 (76.1)
Malnutrition	44 (95.7)	2 (4.3)
Hematemesis (vomiting blood)	15 (32.6)	31 (67.4)
Knowledge on management		
Patients with a feeding tube need daily oral hygiene (mouth washing and Brushing of the teeth).	45 (97.8)	1 (2.2)
Thickened liquid should be avoided	8 (17.4)	38 (82.6)
Watery liquids are the safest substances to drink	6 (13.0)	40 (87.0)
All patients with difficulty in swallowing need a feeding tube	22 (47.8)	24 (52.2)
The best position while feeding the patient is when the patient lies flat on his back	42 (91.3)	4 (8.7)
The patient can always eat normal hospital food	34 (73.9)	12 (26.1)
Feeding tube is only indicated in patients with impaired consciousness	20 (43.5)	26 (56.5)

Table 4. Overall knowledge of dysphagia

Variables	Achieved points (%)	Level of knowledge
Signs and Symptoms	65.38	Moderate
Complications	63.69	Moderate
Management	54.96	Moderate
Total	62.39	Moderate

Table 5. Association between knowledge and selected variables

Variables	Knowledge on Dysphagia				p-value
Educational level	High	Moderate	Low	Total	
Certificate	2	27	5	34	0.366
Bachelor (B.Sc. and BN)	1	11	0	12	
Experience					
0-3 years	1	31	5	37	0.065
4 years and above	2	7	0	9	
Cared for stroke patient with dysphagia					
Yes	3	27	1	31	0.033
No	0	11	4	15	

DISCUSSION

This study was a quantitative, descriptive, non-experimental survey with an objective to assess the level of knowledge of dysphagia and to assess the associations of knowledge with educational level, years of experience and experience in caring for stroke patient with dysphagia among nurses working in Dhulikhel hospital.

We found that the nurses at Dhulikhel hospital had moderate level of knowledge on dysphagia. There was a significant association of knowledge level with the experience in care for stroke patients with dysphagia but not with the qualification level and the years of experience in nursing.

Most of the participants were aware regarding the common signs and symptoms of dysphagia like coughing while eating, feeling of food getting stuck in the throat, choking on saliva during non-meal times, poor movement of tongue, food remaining in the mouth, poor chewing, weight loss and hoarse voice. In our study, 78.3% participants agreed that "patient always cough if they aspirate" which is an incorrect answer. This is consistent with several studies which shows lack of knowledge on silent aspiration among nurses.[2,10,11] In the study conducted by Masiero et al., among 64.2% of stroke patients presented with aspiration, 20.8% aspirated silently.[12] Aspiration pneumonia is quoted as one of the important predictor for mortality in stroke patient and it is vital for the nurses to be aware of its signs and symptoms.[13-15]

Majority of participants had correct responses in the complications of dysphagia like increased mortality (73.9%), pneumonia (84.8%), aspiration (97.8%), dehydration (87.0%), malnutrition (95.7%) and general weakness (89.1%). The better score in complications suggests that participants have fundamental understanding on complications commonly seen in patients with dysphagia. Despite the better understanding on pneumonia as common complications, the participants still lack knowledge on silent aspiration (78.3%). This finding is similar with the study done by Andrea et al. and Durgude et al. where they have highlighted limited knowledge of nurses on the link between oral hygiene, silent aspiration, pneumonia and mortality.[14,16]

In management sections of the questionnaire, there were variable responses for different questions provided. Most of the participants answered correctly for posture and oral hygiene component of the questions but many provided incorrect responses for consistency of food and feeding tubes. 91.3% and 97.8% of the participant were correct regarding common practice in management like proper posture while feeding and questions on oral hygiene respectively. In the same section, 87.0% answered incorrectly for consistency of food to be delivered and

56.5% were incorrect regarding the usage of feeding tube. Most incorrect answers in this management sections possibly could be due to less participation of nurses in its management.[17] This highlights the fact that nurses may have a general knowledge on dysphagia but still lacks the evidence based practice in its management.

Qualification of nursing was not found to be significantly associated with level of knowledge which is supported by other studies as well.[2,18] This could likely be due to limited introduction of post-stroke dysphagia topic in nursing curriculum and also could be due lack of formal training in dysphagia as stated by 93.5% of participants.

Andrea et al. and Harper et al. has shown significant association between knowledge levels and years of experience where they have discussed that the higher knowledge among nurses with more years of experience could be due to accumulation of their clinical experiences.[2,19] This is contrast to the findings of our study where there is no association between knowledge and years of experience, which could be due to poor standard of care for the majority of the patient with dysphagia as most are not diagnosed or treated.[1]

Studies have also shown that care of stroke patient is a significant predictor of increased level of knowledge and it doesn't rely on initial qualification or years of experience.[2] The same could have been with the nurses with higher experience.

The study shows significant association between knowledge levels and care for stroke patients with swallowing difficulties (p = 0.033) which is supported by the study done by Andrea et al.[2] This could be due to the fact that more exposure in caring for stroke patients with dysphagia increases the frequency of providing proper care to the patient that could have significantly improved the knowledge.

Hence, the moderate level of knowledge among nurses implies that their understanding on post-stroke dysphagia is still uncertain. In this study, though most of the participants had cared for the stroke patient, 93.5% had never received formal training on dysphagia. This has unveiled the importance of nurse's role for the care of stroke patients along with the need for proper training to the nurses regarding dysphagia.

Because of the cross-sectional nature of the data, the results only indicate association, but not causality. Thus, we do not know from the data that we have that which of the variables caused varied levels of knowledge about dysphagia in nurses.

The following recommendations were drawn based on the findings of the study:

• A study using large sample size including nurses all over country should be done.

• Nurses should be provided with training on dysphagia related information in regular interval of time and practical management strategies.

• An information booklet about dysphagia in stroke patients aimed at nurses should be developed and implemented on wards where the nurses are most likely to care for patient with dysphagia.

• It is important that further studies on dysphagia should be done, covering multi-professional team, in order to improve patients' care.

CONCLUSION

The results of the present study have shown moderate level of knowledge of dysphagia among nurses in Dhulikhel Hospital. The study has also shown that factors like qualification and years of experience in nursing doesn't correlate with knowledge level but the knowledge level is associated with the experience in taking care of stroke patient. Though majority of nurses have taken care of stroke patient, most of them have not receive formal training on dysphagia and are not satisfied with their knowledge on dysphagia which stresses the importance of further training on dysphagia among nurses.

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