

## Knowledge of Nurses in ENT Related Complications in Non-Dedicated Sub-Specialty Wards

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**Abstract: Introduction:** In our tertiary care hospital, we do not have a specialized ENT in-patient ward. All ENT patients are accommodated in any of the surgical wards or medical wards. In the event of any complications, we were not sure as to how adept are the nurses in all the wards to handle different situations in ENT patients.

**Objective:** To assess whether there is difference amongst nurses in terms of knowledge of potential ENT related complications and patient care between different wards and formal ENT training.

**Methodology:** Nursing staff involved in routine care of adult patients in general ward and special care units were included in the study. A ten-point questionnaire was used to assess knowledge of nurses in ENT patient care. Participants were approached during the working day and were asked to fill out the questionnaire 'on the spot'. Each questionnaire was checked and evaluated by two ENT residents and rated out of 10.

**Result:** The average scores of nurses across the wards were not same and there was significant differences ( $p < 0.01$ ); it was found that in ward b1 nurses scored higher marks compared to those from other wards. Trained nurses were evenly distributed in all wards and there were no association between the distributions of trained nurses across the wards. Positive correlation was observed between the scores and experience of ENT trained nurses.

**Conclusion:** It is advisable to have dedicated ENT and subspecialty wards and provide formal nursing training with respect to managing ENT complications to ensure ultimate patient care.

**Keywords:** ENT diseases, Postoperative complications, Nursing care, Knowledge, Dedicated wards, Nurse training.

### INTRODUCTION

Nurses play a pivotal role in providing qualitative healthcare services to patients, particularly in-patient care [1-3]. Nurses are the only healthcare personals who are in close contact with the patients [4, 5]. The study is conducted at a tertiary care hospital, where a dedicated ENT ward does not exist, but patients are admitted to a general surgical ward, shared by other sub-specialties. On an average, more than 500 patients are admitted under the ENT service yearly, primarily for surgical management. These inpatients are cared by different wards but some wards predominantly handle ENT patients more often than others. All major head and neck cases are handled in ward b1 and d1. In some instances, patient are admitted to non-surgical ward, where nurses may lack knowledge with respect to providing sub-specialty related nursing care; thus, if a complication such as hematoma, threatened airway and auto decannulation of tracheostomy tube were to arise, patients are likely to receive inappropriate management, which might contribute to significant morbidity and in rare cases, mortality. We conducted our study in non-dedicated sub-specialty wards, to assess the knowledge of nurses with in managing ENT related complications, as this

would directly affect response time and appropriate management.

Foxton *et al.* have shown nurses working in a dedicated ENT ward have, on average, greater knowledge than nurses working in generic surgical wards [6]. They found the difference to be statistically significant as well. Overcoming such differences can greatly improve the quality of care provided to patients. A better knowledge and understanding of nurses will reduce stress of hospitalization for patients as they may even be able to pre-operatively counsel the patients [7, 8] or address the apprehensions of patients when the doctors may be unavailable immediately. Similar studies have been conducted with regards to nurse's knowledge and its link to quality of care and management. Nuru N, *et al.* investigated the knowledge and practice of nurses in preventing pressure ulcers during hospital stays. The study found a positive association between the nurses having better knowledge and having received formal training and preventing pressure ulcers and the associated risk factors, which could lead to overall better management [9]. A similar study found the importance of specialized nursing care interventions to improves survival among older post-surgical cancer patients [10]. The purpose of this current study is to identify whether formal training of nurses and inflow of patients was related to

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knowledge with regards to ENT complications, so dedicated wards and proper training may be provided for offering better quality care and patient outcome.

## MATERIAL AND METHODS

The objective of the study is to assess whether there is difference amongst nurses in terms of knowledge of handling potential ENT related complications and patient care between different wards and formal ENT training. It is cross-sectional study conducted at different wards of a tertiary care hospital.

Nursing staff involved in routine care of adult patients in general ward and special care units were included in the study whereas staff working in pediatrics, psychiatry, gynecology, intensive care and emergency units were excluded from the study.

Consecutive sampling method was used. Sample size was calculated using mean difference in data from the study done by Foxton *et al.* [6] using openepi calculator. The required sample size turned out to be 126. The sample per ward was 14 and 9 wards were included in to the study.

Number of ENT admission per year in a particular ward for two consecutive years was noted by information given by record office. After getting the ethics committee approval, nursing staffs of b1 (ward 1), c1 (ward 2), d1 (ward 3), c2 (ward 4), d2 (ward 5), p0 (ward 6), p1 (ward 7), p2 (ward 8) and p3 (ward 9) were provided with a questionnaire. A ten-point questionnaire was used to assess knowledge of nurses in ENT patient care which was taken from the study conducted by Foxton *et al.* [6]. Nurses meeting the inclusion criteria were included. Written informed consent was taken

from all the participants. The filled questionnaires were kept confidential and personal information of the participant was not shared. Participants were approached during the working day and were asked to fill out questionnaire 'on the spot'. Two ENT residents checked each questionnaire, and any difference in marks was discussed, moderated and agreed up on. The individual scores of the nurses were rated against a maximum score 10. The average score for each ward was then calculated. Score greater than 7 was considered high, 5-7 as average and below 5 as low.

Data was stored and analyzed using SPSS 16.0. Frequency and percentages were reported for ENT trained nurses and outcome of knowledge score and the outcome were compared between different wards using Pearson chi square test. Mean of experience and knowledge score were also compared across the wards using one way ANOVA. Pearson correlation was estimated to see the relationship between experience and knowledge score taken by the nurses trained in ENT. All p-values less than 0.05 were considered as significant.

## RESULTS

Total 136 nurses were enrolled in the study. The total number of ENT admissions across different wards in two consecutive years was 1062. The average scores of nurses across the wards were not same and there were significant differences ( $p < 0.01$ ). Nurses in ward b1 scored higher marks compared to other wards. Overall mean score and standard deviation was  $6.01 \pm 1.98$ . It was observed that average year of experience across the wards were similar and it did differ significantly ( $p = 0.380$ ). The average number of years of experience and standard deviation was  $2.29 \pm 1.70$  (Table 1).

**Table 1.** Comparison of Scores and Experience (Years) of Nurses across the Wards.

Parameters	Wards	Number of Admission in Consecutive Two Years	N	Mean	Standard Deviation	p-value
Knowledge Score	b1	505	23	8.09	1.31	<0.01*
	c1	129	11	6.91	1.44	
	d1	264	13	7.62	1.12	
	c2	3	18	4.11	1.02	
	d2	0	7	3.43	0.53	
	p0	47	19	6.68	0.94	
	p1	102	10	6.80	1.54	
	p2	3	11	4.27	1.27	
	p3	9	24	4.88	1.54	
	Total	1062	136	6.01	1.98	
Experience	b1	505	23	3.05	2.68	0.380
	c1	129	11	2.04	0.96	
	d1	264	13	2.13	0.995	
	c2	3	18	2.16	1.13	
	d2	0	7	2.07	1.17	
	p0	47	19	1.58	0.76	
	p1	102	10	2.40	1.83	
	p2	3	11	2.40	1.68	
	p3	9	24	2.42	1.93	
	Total	1062	136	2.29	1.70	

\*p < 0.05 considered significant using one way ANOVA.

Results shows that trained nurses were evenly distributed in all wards and there were no association between distributions of trained nurses across the wards. Nurses in the ward b1

scored high and those in p0, and p1 wards scored moderate and this was significant (Table 2).

**Table 2.** Association of ENT Training and scores of Nurses across the Wards.

Ward	ENT Trained				Knowledge Score					
	Yes		No		More than 7		Between 5 – 7		Less than 5	
	N	%	N	%	N	%	N	%	N	%
<b>b1</b>	4	17.4	19	82.6	17	73.9	6	26.1	0	.0
<b>c1</b>	0	.0	11	100	2	18.2	8	72.7	1	9.1
<b>d1</b>	2	15.4	11	84.6	6	46.2	7	53.8	0	.0
<b>c2</b>	1	5.6	17	94.4	0	.0	7	38.9	11	61.1
<b>d2</b>	0	.0	7	100	0	.0	0	.0	7	100
<b>p0</b>	4	21.1	15	78.9	2	10.5	17	89.5	0	.0
<b>p1</b>	1	10.0	9	90	2	20	8	80.0	0	.0
<b>p2</b>	1	9.1	10	90.9	0	.0	5	45.5	6	54.5
<b>p3</b>	1	4.2	23	95.8	1	4.2	15	62.5	8	33.3
<b>p-value</b>	0.484				<0.01*					
*p < 0.05 Considered as Significant using Pearson Chi Square test										

There was significant positive relation between the scores and experience of ENT trained nurses, and significantly weak correlation was found between the score and experience of nurses who were not trained in ENT (Table 3).

**Table 3.** Relationship of Knowledge Scores with Experience of Nurses With and Without ENT Training.

ENT Trained			Score
Yes	Experience	R	0.581
		p-value	0.029*
		N	14
No	Experience	R	0.211
		p-value	0.020*
		N	122
*p < 0.05 was considered as significant correlation			

Nurses of those wards where there were more number of admissions had scored high irrespective of number of years of experience, which was almost similar across all the wards.

**DISCUSSION**

Besides several other factors, the level of nursing care also depends on the level of knowledge and experience among nurses in the respective specialties [11-13]. Patients under ENT department would require specialized care and their care would depend on the expertise of the nursing staff. In the absence of a dedicated ENT in-patient ward, patients are usually accommodated in the general surgical or other wards

depending on the availability of beds. It is not clear, if nurses in the generic wards are knowledgeable enough to provide quality care to ENT patients. The test of knowledge of nurses in handling ENT patients across all the wards showed that nurses in b1 ward were better equipped to handle ENT patients than other nurses in other wards. The average scores of nurses across different wards were different and were significant (p < 0.01), however nurses in ward b1 have higher scores as compared to other wards followed by d1, p1 and p0. Overall, the mean score and standard deviation was 6.01 ± 1.98. We also observed that the mean number of years of experience of nurses across different wards was almost similar and the difference was not significant. The average year of experience and standard deviation was 2.29 ± 1.70.

ENT trained nurses were evenly distributed in across the different wards but the number was insignificant. High scores were found in b1 ward, moderate scores were found in d1, p0 and p1 wards. Scores of c2, d2, p2 and p3 were on lower side. It could be observed that nurses from surgical wards scored high or moderate scores whereas nurses from medical wards have scores on lower side. Moreover, nurses of those wards where number of ENT admissions were more scored high despite their years of experience being almost similar to of other wards.

Foxton *et al.* reported that in comparison to nurses who were taking care of ENT patients admitted to the generic surgical wards, nursing staff working on a dedicated ENT ward scored well [6]. In this same study, nurses who felt trained in

handling ENT patients scored better in the test of knowledge than those who felt they were not trained. Nurses from the ward for tracheostomy patients and head and neck resections scored the best. Irrespective of the specialty care, the quality of care of nursing staff would depend on the experience and knowledge. Blegen et al assessed the relationship between nurses' education and experience and the quality of care provided. Wards having experienced nurses had lower medication errors and lower patient fall rates [12, 14, 15].

## CONCLUSION

In-patient ENT care requires nurses with advanced skill in handling ENT related procedures and care in patients developing ENT complications. Monetary restrictions prevent hospitals from having a specialized ENT wards with trained and knowledgeable nurses. In the absence of exclusive ENT wards, nurses in other surgical wards who are likely to handle ENT patient should be sufficiently trained and adept at providing qualitative care. However, it is also advisable to have dedicated ENT and subspecialty wards and provide formal nursing training with respect to managing ENT complications to ensure ultimate patient care.

## CONFLICT OF INTEREST

Declared none.

## ACKNOWLEDGEMENTS

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**SUPPLEMENTARY MATERIAL**

**INFORMED CONSENT**

**Project Title:** Knowledge of nurses in ENT related complications in non-dedicated subspecialty wards.

**1. PURPOSE OF THIS RESEARCH STUDY**

You are being asked to participate in a research study designed to study of knowledge of nurses in ENT related complications and patient care in non-dedicated subspecialty wards.

**2. PROCEDURES**

After fulfilling the inclusion criteria you will be included in the study.

You will be questioned and/or asked to fill a 10 point questionnaire .

**3. POSSIBLE RISKS OR DISCOMFORT**

There are no additional risks, intervention or cost involved in the study and includes just filling of a questionnaire.

**4. POSSIBLE BENEFITS**

The direct benefits to you of the study will be evaluation of your ENT complication related knowledge and bring awareness amongst the ENT team of level of knowledge, so training could be done.

Results may help us study how non subspecialty ward effects knowledge of staff in dealing complications.

**5. FINANCIAL CONSIDERATIONS**

There are no additional costs to you that might result from participation in this study.

**6. AVAILABLE TREATMENT ALTERNATIVES**

The study does not involve any experimental procedures.

**7. AVAILABLE MEDICAL TREATMENT FOR ADVERSE EXPERIENCES**

“This study does not involve any additional adverse experiences as it involves just filling a questionnaire.

**8. CONFIDENTIALITY**

Your identity in this study will be treated as confidential. The results and data of the study, may be published for scientific purposes but will not give your name or include any identifiable references to you.

However, any records or data obtained as a result of

your participation in this study may be inspected by the sponsor or by AKU ERC members.

**9. TERMINATION OF RESEARCH STUDY**

You are free to choose whether or not to participate in this study. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to participate. You will be provided with any significant new findings developed during the course of this study that may relate to or influence your willingness to continue participation. In the event you decide to discontinue your participation in the study.

In addition, your participation in the study may be terminated by the investigator without your consent.

**10. AUTHORIZATION**

I have read and understand this consent form, and I volunteer to participate in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study.

**Name of Participant**

**Date:**

**Signature of Participant**

**Date:**

**Signature of Principal Investigator**

**Date:**

**Signature of Person Obtaining Consent**

**Date:**