Nurses' Knowledge and Practice Regarding Oral Care in Intubated Patients at Selected Teaching Hospitals, Chitwan

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Abstract:- Oral care has an important role in maintaining the health and wellbeing among intubated patients admitted in critical care units globally. Nurses provide oral care to the intubated patients which plays pivotal role to prevent ventilator associated pneumonia (VAP) among these patients. The objective of the study is to find out the nurses' knowledge and practice regarding oral care in intubated patients. Descriptive cross sectional research design was adopted with 87 nurses working in critical care units at two teaching hospitals of Chitwan district by using non probability, enumerative sampling technique. Data was collected from 23rd June, 2017 to 22nd July for 1 month. The findings showed that 63.2% of respondents' level of knowledge was adequate whereas 80.5% level of practice was poor. The level of knowledge was significantly associated with working institute and level of practice was associated with age, working institute and total professional experience regarding oral care in intubated patients. There was low positive relationship between knowledge and practice score which is statistically not significant. Hence, it is strongly recommended for need of protocol, in-service education, effective supervision and reinforcement for improvement of oral care practice in intubated patients.

Keywords:- Knowledge, Practice, Oral Care, Intubated Patients

I. INTRODUCTION

Oral care is an important and critical component of critical care nursing. It is a basic nursing care activity that provides relief and comfort to patients who are seriously ill. It can decrease the incidence of pneumonia [1]. Patients undergoing mechanical ventilation may be at the higher risk for ventilator associated pneumonia because tracheal tube increases the bacterial adhesion to mucosa. In addition, multiple use of drugs may cause the oral dryness which can affect the oral health Care [2]. Oral care have short-term effects in the patients as well as it can prevent from long term complications such as tooth decay, bad breath, gum disease and sinus infections [3]. Implementing an oral care protocol can reduced the incidence of ventilator associated pneumonia (VAP) by 46% to nearly 90%, substantially decreasing associated costs [4].

The American Association of Critical Care Nurse (AACN) (2006) recommends assessment of the oral cavity and lips every 8 hours, oral swabs with 1.5% hydrogen peroxide solution every 2 to 4 hours. To avoid the risk of aspiration, suctioning of the oral cavity/pharynx should be done frequently [5]. To remove plaque and debris from the oral cavity, mouth rinses are applied with a swab, with or without tooth brushing and toothpaste. Oral care also involves suction to remove excess fluid, toothpaste and debris [6].

Oral care is often neglected in intubated patients and performed inadequately. Oral care is often considered as an intervention for patient's comfort only. Artificial airways makes difficult to perform oral care in intubated patients [3]. There are variety of reasons for inadequate oral care interventions such as lack of knowledge, lack of academic standards, different oral care regimes and procedures and lack of interdisciplinary cooperation [7].

Study have revealed that majority of nurses agreed that oral hygiene is very important to ventilated patients and also had good knowledge about oral care in ventilated patients whereas majority of nurse had poor practice and attitudes about oral care in the critical care unit [8].

Oral care provision for mechanically ventilated patients can be improved by providing oral care education, providing nursing staff with adequate time, reducing the perception that oral care is unpleasant, and making oral care a priority in nursing care in ICUs. [9].

II. METHODOLOGY

A. Methods

A hospital based cross sectional study was conducted using Non-probability, enumerative sampling technique among eighty seven nurses' working at Critical Care Units.

B. Sample and Setting

Study was conducted in Medicine Intensive Care Unit (MICU), Neuro Intensive Care Unit (Neuro-ICU) and Surgical Intensive Care Unit (SICU) of Chitwan Medical College Teaching Hospital (CMCTH) and MICU, Coronary (CCU), Neuro-ICU and SICU of College of Medical Science (CMS). The study population were 87 registered nurses who passed Proficiency certificate level nursing and/or Bachelor degree of nursing and are working in

critical care units of teaching hospitals of Chitwan, willing to participate at the time of data collection period.

C. Instrumentation

Structured Self-administered questionnaire was used for assessing knowledge Observation checklist was used for observing practice regarding oral care in intubated patients. The structured knowledge questionnaire was multiple choice questions.

This instrument consisted of four parts

➢ **Part I-** Questions related to socio–demographic information
➢ **Part II**- Questions related to professional information
➢ **Part III**- Structured questions related to knowledge regarding oral care in intubated patients
➢ **Part IV**-Observation checklist related to practice regarding oral care in intubated patients.

D. Data Collection:

Data collection was done on 23rd June, 2017 for 1 month. Researcher herself observed the respondents practice regarding oral care in intubated patients using observation checklist Researcher then distributed self-administered questionnaire to assess knowledge to the same respondents whose practice was observed in the same shift.

E. Data Analysis

The collected data was coded and entered into Epi Data 3.1 and exported in IBM SPSS 20 version .The data was analyzed in terms of descriptive statistics i.e., frequency, percentage, mean, median, standard deviation. Similarly, Chi square was used to measure the association between respondents' knowledge level and practice level with selected variables. Spearman's rank correlation test was used to determine the relationship between respondent's knowledge score and practice score regarding oral care in intubated patients.

III. RESULTS

➢ *Socio-demographic Variables of the Respondents*
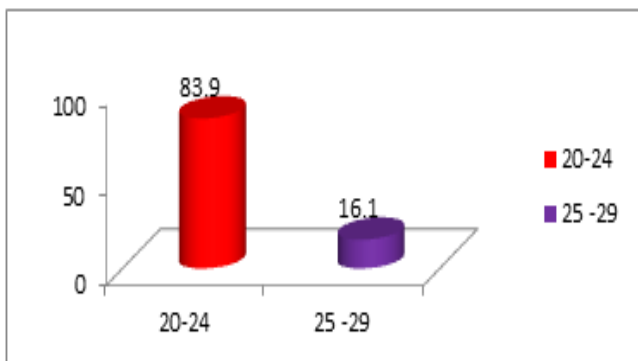

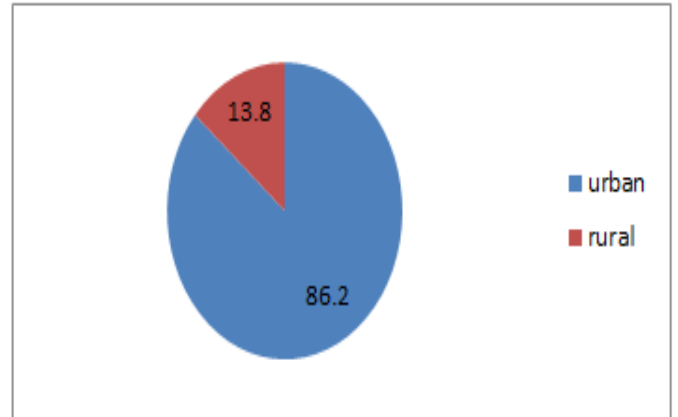Fig 1:- Age of Respondents

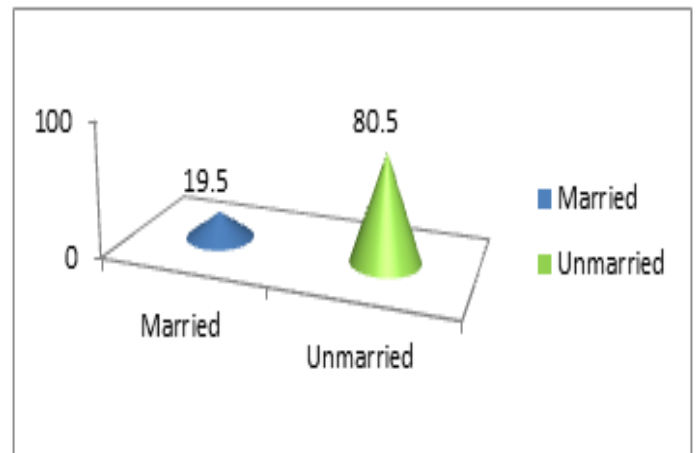Fig 2:- Place of Residence

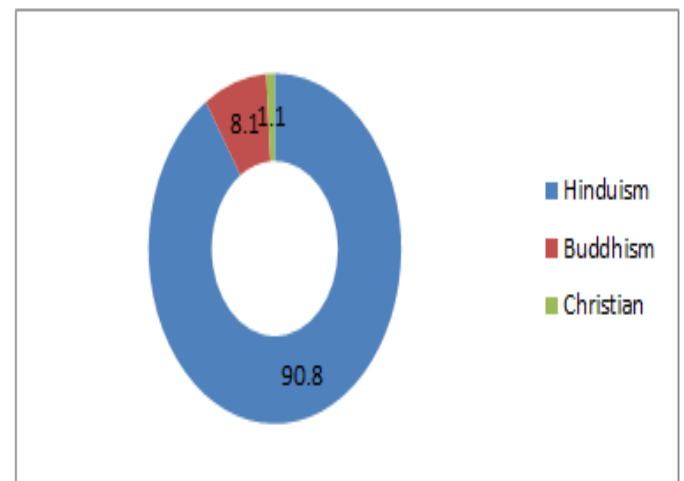Fig 3:- Marital Status of Respondents

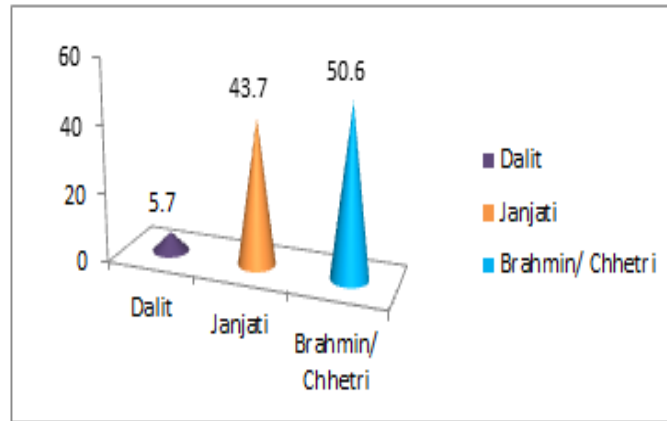Fig 4:- Religion of Respondents

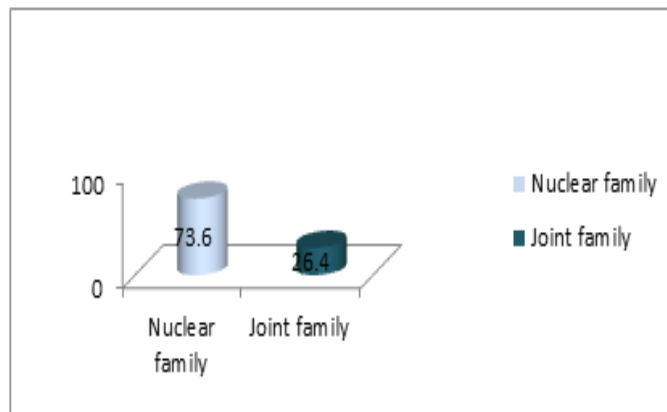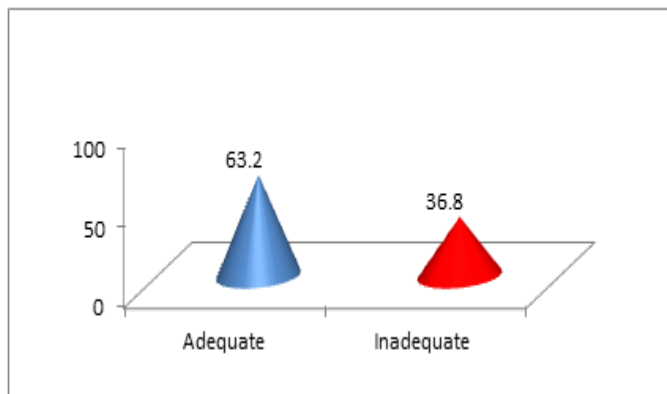Fig 5:- Ethnicity of Respondents

Fig 6:- Type of Family of Respondents
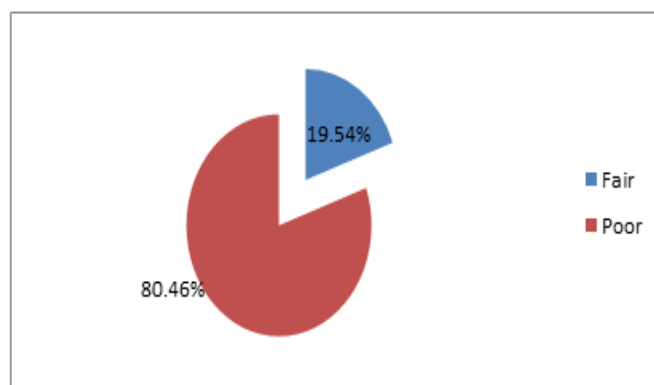

Fig 7:- Respondents' level of knowledge

Fig 8:- Respondents Level of Practice

Variables	Level of Knowledge		χ^2	p -value
	Inadequate No. (%)	Adequate No. (%)		
Professional qualification				
Proficiency certificate in nursing	24(41.4)	34(58.6)	1.58	0.24
Bachelor level in nursing	8(27.6)	21(72.4)		
Professional designation				
Staff nurse	30(38.0)	49(62.0)	0.11	0.73
Senior staff nurse	2(25.0)	6(75.0)		
Working institute				
CMCTH	13(24.5)	40(62.0)	8.75	**0.003**
CMSTH	19(55.9)	15(44.1)		
Working unit				
Medical ICU	12(32.4)	25(67.6)	0.79	0.07
Surgical ICU	4(21.1)	15(78.9)		
Neuro ICU	11(45.8)	13(54.2)		
CCU	5(71.4)	2(28.6)		
Professional experience				
1 years	18(43.9)	23(56.1)	1.70	0.42*
1-3 years	12(30.8)	27(69.2)		
>3 years	2(28.6)	5(71.4)		
Critical care experience				
1 years	20(40.0)	30(60.0)	0.52	0.76*
1-3 years	11(32.4)	23(67.6)		
>3 years	1(33.3)	2(66.7)		
Participated in in-service education on oral care				
Yes	11(29.7)	26(70.3)	1.37	0.24
No	9(18.0)	4(82..0)		
Available protocol on oral care				
Yes	23(35.9)	30(46.9)	0.74	0.78
No	9(39.1)	14(60.9)		
Nurse patient ratio				
1:2	5(62.5)	3(37.5)	5.11	0.78*
1:3	13(27.1)	35(72.9)		
>1:3	14(45.2)	17(54.8)		

Table 1:- Association Between Respondents' Level of Knowledge Regarding Oral Care in Intubated Patients and Profession Related Variables.

*Significant level of P-value at 0.05; *Likelihood; €-Fishers Exact Test; Others: Buddhism and Christian*

Table 1 shows statistically significant association between respondents' level of knowledge regarding oral care in intubated patients and working institute (p=0.003).

Variables	Level of Practice		χ^2	p-value
	Poor No. (%)	Fair No. (%)		
Age group(in years)				
20-24	63(86.3)	10(13.7)	7.67	**0.006***
25 -29	7(50.0)	7(50.0)		
Place of residence				
Urban	59(78.7)	16(21.3)	0.44	0.50¥
Rural	11(91.7)	1(8.3)		
Marital Status				
Married	15(88.2)	2(11.8)	0.31	0.57¥
Unmarried	55(78.6)	15 (21.4)		
Ethnicity				
Dalit	3(60.0)	2(40.0)	1.55	0.46*
Janjati	30(78.9)	8(21.1)		
Brahmin/ Chhetri	37(84.1)	7(15.9)		
Religion				
Hinduism	64(81.0)	15(19.0)	0.00	1.00¥
Other than Hinduism	6(75.0)	2(25.0)		
Type of family				
Nuclear family	50(78.1)	14(21.9)	0.37	0.52¥
Joint family	20(87.0)	3(13.0)		

Table 2:- Association between Respondents' Level of Practice of Oral Care in Intubated Patients and Socio-Demographic Variables (N=87)

*Significant level of P-value at 0.05;*Likelihood; ¥ -Yates Correction; others: Buddhism and Christian*

Table 2 shows statistically significant association between respondents' level of practice regarding oral care in intubated patients and age of respondents (p=0.006).

Variables	Level of Practice		χ^2	p -value
	Poor No. (%)	Fair No. (%)		
Professional qualification				
Proficiency certificate level in nursing	48(82.8)	10(17.2)	0.58	0.44
Bachelor level in nursing	22(75.9)	7(24.1)		
Professional designation				
Staff Nurse	66(83.5)	13(16.5)	3.28	0.70
Senior Staff Nurse	4(50.0)	4(50.0)		
Working institute				
CMCTH	38(71.7)	15(28.3)	6.62	**0.010**
CMSTH	32(94.1)	2(5.9)		
Working unit				
Medicine ICU	23(52.3)	21(47.7)	0.11	0.91
Surgery ICU	22(51.2)	21(48.8)		
Total professional experience				
<1years	26(96.3)	1(3.7)	8.78	**0.012***
1-3years	40(75.5)	13(24.5)		
>3 years	4(57.1)	3(42.9)		
Critical care experience				
<1years	33(89.2)	4(10.8)	5.63	0.06
1-3 years	36(76.6)	11(23.4)		
>3 years	1(33.3)	2(66.7)		
Participated in in-service education				
Yes	29(78.4)	8(21.6)	0.17	0.67
No	41(82.0)	9(18.0)		
Available protocol or guideline on oral care				
Yes	54(84.4)	10(15.6)	1.51	0.21
No	16(69.6)	7(30.4)		
Nurse patient ratio				
1:2	7(87.5)	1(12.5)	0.33	0.84
1:3	38(79.2)	10(20.8)		
>1:3	25(80.6)	6(19.4)		

Table 3:- Association Between Respondents' Level of Practice of Oral Care in Intubated Patients and Profession Related Variables. (N=87)

Significant level of P-value at 0.05;*Likelihood; ¥ - Yates Correction; Medicine: Medical Icu and CCU; Surgery: Surgical and Neuro Icu

Table 3 show statistical significant association of respondents' level of practice of oral care in intubated patients with working institute (p=0.01) and total professional experience (p=0.01).

Variables	Correlation*	p-value
Knowledge and practice score	0.07	0.49

Table 4:- Relationship between respondents' knowledge score and practice score regarding oral care in intubated patients by spearman's correlation coefficient (n=87)

Significant level of P-value at 0.05 ∗Spearman correlation coefficient

Table 4 shows low positive relationship(r=0.07) between nurses' knowledge and practice score regarding oral care in intubated patient which was statistically not significant.

IV. DISCUSSION

Present study showed that 63.2% of respondents had adequate knowledge and 36.8% had inadequate knowledge. While a study conducted in Egypt found 64.0%of respondents had good knowledge, 20% had fair knowledge and 16.0% had poor knowledge [8]. Another study conducted in Palestine reported 1.2%of respondents had very poor level of knowledge,48.8% of respondents had poor level of knowledge, 48.8% of respondents had good knowledge and 1.2% of respondents had very good knowledge[10].Researcher interpreted that about one third of the respondents in present study had inadequate level knowledge regarding oral care in intubated patients which needs to be improved for quality nursing service.The discrepancies between studies might be due to reason that almost half of respondents in the study had less than one year total professional experience, more than half of respondents had less than 1 year experience in critical care units,majority of respondents had proficiency certificate degree.Lack of inservice training and lack of self directed learning might be other reasons for the inadequate knowledge.

In present study, 19.54% of respondents had fair practice and 80.46%of respondents had poor practice regarding oral care in intubated patients. In contrast the study conducted in Palestine found that 3.6% had poor practice,41.7% had acceptable practice and 54.8% had good practice [10].While the study conducted in Egypt found none of the respondents had good knowledge regarding oral care in intubated patients[8]. Majority of respondents in this study had poor practice regarding oral care in intubated patients for which immediate action for improvement is needed. The rational for these discrepancies between studies might be due to respondents having less than 1 year professional experience, less than 1 year professional experiences in critical care units, lack of in-service training, inappropriate nurse patient ratio and ignorance towards oral care in intubated patients.

Finding of this study shows that significant influencing variable for knowledge regarding oral care in intubated patients was working institute (p=0.003).Similarly, the significant influencing variable on practice regarding oral care in intubated patients were working institute (p=0.010), age (0.006) and total working experience(p=0.012). This findings is supported by the study conducted in Taiwan which reported significant association between age of nurse and oral care practices (p=0.001) [11].This findings is contradictory to a study conducted in Sudan reported no association between oral care practice and experience (p=0.663) [12].

Further, this study revealed that was low positive correlation (r=0.07) between knowledge and practice score in intubated patients which is statistically not significant (p=0.49). While the study conducted in Egypt showed negative correlation(r= -0.11) between knowledge and practice which was statistically not significant (p=0.23) [8].In contrast to the findings a study done in Taiwan reported significant correlation (r=0.20, p=0.004) between oral care knowledge and practice among nurses [11].

V. CONCLUSION

It is concluded most of the respondents had adequate level of knowledge. The significant influencing variable for level of knowledge was working institute. Majority of respondents had poor practice. The significant influencing variable for level of practice was age, working institute and total professional experience. There was no statistically significant association between nurses' knowledge score and practice score regarding oral care in intubated patients.

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