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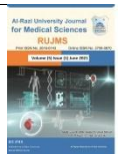

Nurses Knowledge, and Attitudes Toward Oral Care patient with Mechanical Ventilation at Public Hospitals, Sana'a-Yemen

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Abstract:

The aim of study: to assess nurses' knowledge, and attitudes toward oral care patients with mechanical ventilation. **Methods:** A descriptive cross-sectional study design on hospital based, convenience method sampling of nurses; 246 nurses at selecting sitting. One tool was utilized for data collection: Structure interview questionnaire schedule: It consists of three parts, demographic characteristics; knowledge questionnaire sheet; and attitudes regarding mouth hygiene. **Results:** the most (61.0%) of nurses were male, belonged age group-20-30 years (84.1%). More than half (55.7%) of them had diploma and (74.8%) of them had experience range from 1-5years. Most (41.5%) of nurses had fair knowledge and (63.4%) of the nurses had positive attitude toward oral care for patient under mechanical ventilation. **Consolation:** more than half of nurses had fair knowledge and positive attitude toward oral.

Keywords: Nurse; Knowledge; Attitude; Oral Care.

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Introduction

Oral care is a vital procedure for critically ill patients in the intensive care unit (ICU). The wellbeing of patients in intensive care units may be impacted by oral care. The main goals of oral care are to encourage good oral hygiene, decrease dental plaque and microbial colonization of the oropharynx, and prevent aspiration of contaminated saliva[1]. A significant proportion of severely ill patients in ICU, invasive mechanical ventilation (MV) and tracheal intubation are life-saving interventions. However, the use of MV is associated with a variety of complications, the most common of which is ventilator-associated pneumonia (VAP)[2].

VAP is a type of hospital-acquired pneumonia that affects endotracheally intubated and mechanically ventilated patients and develops within 48–72 hours. VAP is the leading and second most frequent cause of mortality among nosocomial infections, which increases hospital stays and the amount of money spent on healthcare in the United States by billions of dollars [3]. Evidence-based oral care procedures may lower the prevalence of VAP in patients, according to many ICU surveys that have been documented in the literature from the USA, Europe, and the UK. Nurses' understanding of evidence-based VAP preventive measures was found to be limited in Arab nations while knowledge was examined in a sample of Yemeni ICUs. However, when it came to routine dental care, more than 60% of the nurses were often correctly. For MV patients, providing oral care is a crucial aspect of nursing care [4]. Critically ill patients in the ICU are associated with increased morbidity, mortality, and hospital care costs as patients are immunocompromised and at a high risk for infections. The overall infection rate may be as high as 50%–60% in patients who remain in ICU for more than 5 days and incidence of VAP may range from 10% to 65% which could be a prime concern in ICU[5] . Intubated patients' oral care needs are managed through oral assessment, equipment, solution, and frequency selections. Oral evaluations mirror diagnostic procedures, which give nurses important information about possible complications and effective and efficient treatment[1].

The knowledge, and attitude of nurses in the field of oral health play an important role in providing the health of the individual and the community, and due to the lack of adequate studies in Yemen about oral care in ICU[6].

Aim of the study

To assess nurses' knowledge, and attitudes toward oral care patients with mechanical ventilation.

Research Questions

What is the knowledge level and attitude level of nurses toward oral care patients with mechanical ventilation?

Materials and Methods

Research Methodology

A descriptive cross-sectional study design was utilized. The study was conducted intensive care unit in two different hospitals at public hospitals in Sana'a City. These hospitals were chosen because, they have mechanical ventilation. They referral hospitals for Yemeni's person. The nurses were 246 using convenience sampling method. *Structure interview questionnaire sheet* was utilized for data collection: It consists of three parts:

Part I: demographic characteristics which include: age (year), sex, marital status, educational level, years' experience, training courses toward oral care.

Part II: Knowledge of nurse toward oral care patients with mechanical ventilation was adapted from a previous study VAP[7].That contains (7) questions.

Part III: Attitude of nurse toward oral care patients with mechanical ventilation, this part continues of (16) questions.

Scoring system

The scores for knowledge regarding oral care, each item was given a score 1 for right

responses and make zero for wrong responses. The total scores for the of knowledge regarding oral care (34 scores) and was classified into the following: *good knowledge*, more than 75%, *fair knowledge*, more than 50% to 75% and *poor knowledge*, equal and less than 50%.*The scores for attitude regarding oral care,* nurses respond on a five-point, Likert scale, every item was given a score, 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1for strongly disagree. The total scores for the of knowledge regarding oral care (80 scores) and was classified into the following: *positive attitudes* > 60% and *negative attitudes* ≤ 60 %.

Data collection method:

The data was collected during January to April 2022 where a good relationship was maintained throughout the data collection period, the questionnaire was prepared in English and translated from English to Arabic using translation. All nurses in ICU received a questionnaire in Arabic. If some of the items in the questionnaire are unclear to a participant, the researcher clarifies the miss understand. The questionnaires were filled out in the presence of the researcher and the participants were free to ask any questions or clarifications. All data collected by researcher was checked daily for completeness. A research panel (3 academic staff and 2 clinical ICU nurses) reviewed the questionnaire, who checked the suitability, clarity, and understandable wording in the context. Cronbach's alpha coefficient was used to determine the reliability of the tool and its values for knowledge, and attitude questionnaire were (0.90, and 0.58) respectively. It was tested in a pilot study with 24 ICU nurses; the results were not included in the main study.

Data Processing and Statistical Analysis

Collected data were coded and entered a Statistical Package for Social Sciences (SPSS) version 24 database. Data were analyzed, qualitative variables through descriptive statistics frequency tables and pie chart are used for establishing the data. and mean and standard deviation were used in quantitative variables. Spearman correlation coefficient test was used to analyze the data. The 0.05 level was used as the cut off value for statistical significance.

Ethical Consideration

The researchers obtained consent to conduct research from the faculty of health sciences, al-Razi university. The managers of hospitals where the research was conducted. Informed oral consent was obtained from the participants confidentiality and privacy concerning all information were ensure anonymity each participant was provided. The purpose and objectives of the study were explained to all study participants and right of participant like those that the right to withdraw any time, in the whole study was used and confidentially.

Results

Sociodemographic data of nurses

A total of 246 ICU nurses in the study. It clarifies that, the majority (84.1%) of nurses were age group between 20-30 years old, with mean age was 27.1± 4.9, and (61.0%) of them were males. More than half (55.7%) of them had a diploma as an educational level, while (74.8%) of nurses were had years' experience between 1-5 years, with mean age was 4.32±3.52. Most (61.40%) of nurses didn't taka training courses about oral care.

Knowledge, and attitude of nurses

According to table 1, most (41.5%) of nurses had fair knowledge level toward oral care, follow by (35.4%) of them had poor knowledge level while (23.2%) had good knowledge level toward oral care, with mean was 19.6 ± 7.73. As regard to attitude, (63.4%) of nurses had positive attitude while, (36.6%) of them had negative attitude about oral care, with mean was 58.42± 15.50. There was positive correlation between knowledge and attitude, with statistically significant difference were (r .254**, p= 0.001).

Table (1): Level and mean score of knowledge, attitude of nurses toward patient's oral care regarding mechanical ventilation

Variable levels		F/(%)	Mean ±S.D	Correlation coefficient (r)	p-value
Knowledge	Good knowledge	57 (23.2%)	19.6±7.7	0.254**	**<0.001**
	Fair knowledge	102 (41.5%)			
	Poor knowledge	87 (35.4%)			
Attitude	Positive attitude	156 (63.4%)	58.4±155		
	Negative attitude	90 (36.6%)			

**** Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level.**

Table (2): Relationship between knowledge, and attitude of nurses toward oral care with demographic information using Spearman correlation coefficient

Demographic variables	Knowledge		Attitude	
	Correlation coefficient (r)	p-value	Correlation coefficient (r)	p-value
Age	0.002	0.971	-0.021-	0.744
Sex	-0.046-	0.470	-0.238-**	**0.001**
Marital status	-0.022-	0.737	-0.049-	0.442
Education level	0.098	0.125	0.048	0.450
Years' experience	0.152*	**0.017**	-0.024-	0.705
Training courses of oral care	0.040	0.534	0.063	0.323

**** Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level**

Table 2 shows that, there was statistically significant difference between demographic variables regarding to years' experience and knowledge level were (r=0.152*, p-value= 0.017). There was statistically significant difference between demographic variables regarding to sex and attitude level were (r=-0.238-**, p-value= 0.001).

Discussion

Maintaining good oral health among hospitalized individuals is essential for health outcomes and quality of life. Nurses, being the primary oral care givers require[8]. This study was aimed to assess nurses' knowledge, and attitudes toward oral care patient with mechanical ventilation.

The present study clearly that, most of nurse's ware male, belonged age group between 20-30 years (84.1%) with the mean (27.1±4.9) years old. More than half of nurses had diploma, and 74.8% of them were years' experience between (1-5) years with mean (4.32±3.52) years' experience. Most of nurses were single and 61.40% of nurses didn't taka training courses about oral care. Many people are unaware of how maintaining oral health may improve whole body health, which helps to explain why oral health care is frequently ignored in clinical settings[9]. Our study was agreement with the

study conducted in Indian among nurses by Sreenivasan, et al., about 94% were diploma candidates with a mean age of 27.5 years old[3]. Fathermore, the study conducted in Sudan among nurses by Ibrahim et al. the mean age of nurses was 27.95 ± 4.51 years old[15]. The study conducted in Chitwan for nurses by Thapa and Shrestha, who mentioned that, (80.5%) of respondents were unmarried[14]. The study conducted in India among nurses by Philip et al., who reported that, they had an average of 4.73 years' experience and (66.8%) had diploma qualification[10]. Moreover, Aboalizm and Kasemy, mentioned that, most of nurse qualification (45.0%) had diplomat [5]. Dagnew et al., more than half (56.2%) of the participants were diploma nurses[13]. In contrast, a study in Rwanda, revealed that, the majority of participants were never trained to perform mouth care on ventilated patients[11]. Tembo most of the participants were a diploma level of nursing education[12]. Rodrigues et al., majority of nurses and nursing technicians do not have training in oral care[9]. However, our study unaccepted with Philip et al., who founded that, more than half of participants were female, and nearly 60% of participants had received some form of oral health training[10]. One the line, Aboalizm and Kasemy, reported that, (76.0%) of nurses was female[5]. Our present result show that, most (41.5%) of nurses had fair knowledge toward oral care patient with mechanical ventilated, mean was 19.6 ± 7.73. Our study accepted with Jahani and Poursangbor, Iran their result was most of participants were moderate knowledge regarding oral care of mechanically ventilated patients[16]. Similarly, a study in Rwanda indicated that more than half of participants knew various procedures that might be considered comprehensive mouth care[11]. Lin et al. reported that, most of intensive care unit nurses' oral care knowledge were (58·8%)[17]. Sreenivasan, et al., founded that, 83% of nurses showed satisfactory knowledge levels[3]. On the same line, Thapa and Shrestha, showed that, 63.2% of sampling had adequate knowledge and 36.8% had inadequate knowledge[14]. Furthermore**,** Ibrahim et al. mentioned that, the majority of nurses 97.4% stated that provision of oral care in ICU is important for infection prevention[15]. This result opposite to the study contacted in Menoufia University their knowledge was (64 had good knowledge[5]. Al-Zaru et al., indicated that the nurses did not have adequate knowledge[7]. Tembo demonstrates that most of nurses had a poor level knowledge for patients with an oral endotracheal tube[12].

The present study shows that (63.3%) had positive attitude toward oral care patient with mechanical ventilated, mean was 58.42± 15.50, Our result of study supported with Philip et al., 2019 who displayed that, most of nurses positive attitudes towards oral care[10]. Moreover, this result in agreement with the study by Lin et al. founded that, most (79·4%) of nurses' oral care positive attitudes[17]. Tembo, demonstrated that, ICU nurses a more positive attitude of the priority of oral care for patients with an endotracheal tube[12]. Furthermore**,** Ibrahim et al. mentioned that, nurses who had positive attitude towards mouth care for ICU patients were in the majority (97.4%)[15]. Dagnew et al., showing a good attitude towards the oral care of the patients by the nurses[13]. On other hand, the present study unaccepted with Aboalizm and Kasemy, who showed that, the majority (84.0%) of the nurses had a negative attitude regarding to oral care[5]. Fathermore, Jahani and Poursangbor, showed that, more than half 55% of nurses was poor attitude regarding to oral care of mechanically ventilated patients[16]. Our finding results shows there was statistically significant difference between demographic variables regarding to years' experience and knowledge level were (p-value=0.017). It means, nurses whose employment status is uncertain such as contract nurses have a higher level of

knowledge than others, which is probably because they have recently been employed and their knowledge is up to date. there was statistically significant difference between demographic variables regarding to sex and attitude level were (p-value= 0.001). Our result of study supported with Philip et al., who reported that, there was statistically significant difference between years' experience and knowledge level[10], and was in contrast with a European study which stated that more experienced the nurses, better is the knowledge, and attitude of oral care[18]. Dagnew et al., revealed that, the categories of participants' characteristics did not have significant ($p \geq 0.05$) difference in attitude scores[13]. Moreover, Tembo founded that, there was no statistically significant difference between knowledge and qualification levels (p=0.920)[12]. Fathermore, Jahani and Poursangbor, concluded that, there was a direct relation between knowledge and employment (P-value = 0.031)[16]. The present study not supported with Sreenivasan, et al., who showed that, there was not statistically significant between the knowledge levels among nurses with more than 5 years and < 5 years of experience[3]. One the same line Ibrahim et al. in Sudan, that no significant correlation existed between ICU nurses experience and their knowledge levels toward oral care[15]. The present show that, there was positive correlation between knowledge and attitude, with statistically significant difference. Oure result agree Aboalizm and Kasemy, found that there was statically significant positive relationship between attitude score and knowledge about oral care p value (0.018)[5]. Moreover, Ibrahim, Mudawi and Omer, showed that, there was a highly significant correlation (P < 0.001) between knowledge and attitude[15].

Conclusion

More than half of nurses had fair knowledge, and few of them had good knowledge. While. They had positive attitude toward oral care. There was statistically significant difference between years' experience and knowledge level were (p-value= 0.017) and between sex and attitude level were (p-value= 0.001).

Recommendation

1. Educational and training sessions, lecturers, and education sessions for nurses in oral care which relies on nursing interventions.
2. Establishes a protocol on oral care in all hospitals in general and in care units.
3. A similar study is recommended to include a large samples size of nurses in the multi hospital in Yemen.

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