



NURSING STUDENTS' KNOWLEDGE ATTITUDE AND PRACTICE OF ORAL CARE FOR CRITICALLY ILL PATIENTS IN UNIVERSITY OF CALABAR TEACHING HOSPITAL, CALABAR, NIGERIA.

Nursing

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ABSTRACT

Immobility and low oral immunity offers opportunity for oral microbial flora to invade the oral cavity of patients. Oral care is a vital component of nursing care that is necessary to maintain safety and comfort in critically ill patients. This study examined the nursing students' knowledge, attitude and practice of oral care for critically ill patients in University of Calabar Teaching Hospital (UCTH), Calabar, Cross River State, Nigeria. Three research questions and one hypothesis were formulated to guide the study. The study utilized descriptive design, and a sample size of 111 comprising students in their 400 and 500 levels, were randomly selected for the study, (50%) of the total population. A structured item questionnaire was developed, pretested and used for data collection. Descriptive analysis was done using SPSS 21.0 statistical packages while inferential statistics of using Pearson Product Moment Correlation was used to test the hypothesis. Result revealed that students have good knowledge of the importance of oral care for critically ill patients, (98.2%), 45.9% viewed oral care as a high priority in patient care, although 66(59.5%) respondents actually performed oral care, but only 20(30%) perform it once a day while a vast majority 30(45%) carry out oral care whenever they feel there is time. Lack of resources (64.6%), lack of practice of oral care by clinical nurses working on the wards (47.9%), and lack of practical experience by students themselves (45.8%) were ranked the highest amongst other barriers to the practice of oral care by the students. Hypothesis revealed a significant relationship between knowledge and attitude of nursing students towards oral care for critically ill patients (Calculated r-value is .197 at .05 level of significance), in UCTH, Calabar. The study therefore recommended re-enforcement of training on oral care, provision of adequate materials for the performance of oral care, clinical practice under mentorship to gain experience on oral care.

KEYWORDS

Knowledge, Attitude, Practice, Oral care, Critically ill patients

Introduction

Oral care as a component of nursing care can be used to maintain the integrity of oral health of critically ill patients (Tygerberg, Janet & Hons, 2007), as well as reduce the incidence of complications such as ventilated associated pneumonia (VAP) which critically ill patients often face (Samira and Zeinab, 2016; Augustyn, 2007). Zeinab (2016) posits that oral care is necessary to maintain safety and comfort in critically ill patients, hence it becomes inevitable. Critically ill patients lack ability to care for their mouth. They are often challenged with dental caries, gingivitis and gum disease. The incidence of these infections varies from 9% to 20% with mortality rate ranging from 24% to 50% (Sara & Amal, 2015). This simply indicates that poor mouth care of critically ill patients is disastrous, therefore oral care is a no bargain option to maintain the oral health of critically ill patients. To communicate its usefulness, it has been included in the fundamental nursing curriculum, yet it is hardly carried out by nursing students (Ying, Jung, Tsyr & Meei, 2011).

Procedures for oral care in critically ill patients ranges from brushing the tongue and teeth, massaging the gum with tooth brush and water to cleansing dentures (Tygerberget al., 2007). Ross and Crumpler (2007) added that tooth paste can be used for brushing followed by water and elastic catheter to rinse the mouth. Many barriers to providing effective oral care have been documented, such includes poor knowledge of the procedure, fear of causing pain on the patient, perception by nurses that oral care is not significantly beneficial, patients resisting the procedure and lack of oral care resources (equipment), the presence of treatment appliances for management of critically ill patients as a complicating factor that hinder the procedure, shift of attention to other aspects of nursing care, and lack of recommendation for oral care (Sara & Amal, 2015; Tygerberget al. 2007; Samira and Zeinab, 2016). Despite the barriers to practice of oral care, remedies are available to correct them. Hence, changing the perception of the providers of oral care is necessary, provision of assessment tools and evidence based oral care guidelines have proved to salvage the situation according to (Dickson, 2012). Based on this premise, the researcher sought to assess the nursing students' knowledge, attitude and practice of oral care for critically ill patients in University of Calabar Teaching Hospital (UCTH), Calabar, Cross River State.

Motivation for the study:

Interaction of the researchers with nursing students from the Department of Nursing Science, University of Calabar (UNICAL), on clinical posting for clinical practice at the University of Calabar Teaching Hospital (UCTH), generated similar comments that oral care is one procedure that is hardly carried out by students. It then became worrisome to the researchers that nursing students do not carry out oral care despite its health benefits.

Against this background, the researchers through this study sought to answer the following questions; what is the level of knowledge of nursing students of the Department of Nursing Science, University of Calabar (UNICAL), on the importance of oral care for critically ill patients in UCTH, Calabar? What is their attitude towards oral care for critically ill patients? Do they actually perform oral care on the critically ill patients? What are those factors that dissuade nursing students from carrying out oral care on critically ill patients in UCTH, Calabar?

Objectives of the study:

The study specifically sought to;

- ascertain the level of knowledge of nursing students of the Department of Nursing Science, UNICAL, on the importance of oral care on critically ill patients in UCTH, Calabar,
- assess nursing students' attitude towards oral care for critically ill patients in UCTH, Calabar,
- examine the practice of oral care on critically ill patients by the nursing students
- identify the barriers to practice of oral care for critically ill patients in UCTH, by the nursing students of the Department of Nursing Science, UNICAL.

Null Hypothesis (Ho): There is no significant relationship between level of knowledge and attitude of the nursing students of the Department of Nursing Science, UNICAL, towards oral care for critically ill patients in UCTH, Calabar.

Operational definition of terms:

Nursing students: Nursing Students currently in 400 and 500 levels of

study in the Department of Nursing Science, University of Calabar (UNICAL), Calabar, Cross River State, Nigeria.

Knowledge: Awareness of techniques and importance of oral care gained by students nurse either by education or by clinical posting experience.

Attitude: This is the mental disposition about oral care on critically ill patients by nursing students.

Practice: The act of carrying out oral care on critically ill patients using available oral care resources.

Oral Care: It is the act of cleaning the oral cavity, allowing the patient to take mouth full of water, spit into the receiver, use tissue or linen to dry around the mouth (for patients whose health condition permits that), and apply moisturizer to the patient lips if required in order to keep the mouth clean and fresh devoid of infections, or brushing the tongue and teeth, massaging the gums with toothpaste, and water to cleansing dentures, followed by water and elastic catheter to cleanse the mouth (for those who cannot help themselves).

Critically ill patients: Patients suffering from life-threatening illnesses, that do not recover sufficiently quickly to become independent, or recover slowly. These patients are also called chronically or terminally ill patients. In this study they included patients with chronic medical conditions like stroke, cancer, diabetes with ulcers, HIV/AIDS, chronic renal failure, liver cirrhosis, unconscious patients, head injuries, multiple fractures, nursed in orthopedic wards, medical wards, and intensive care unit.

Conceptual and empirical reviews in relation to oral care of the critically ill:

Studies reviewed has it that change in oral enzyme level in a critically ill patient makes oral flora to change from the primarily gram negative organisms within 48 hours (Heck, 2012). These changes bring more virulent flora which have high tendency to cause ventilation associated pneumonia (Munro, Grap & Kleinpell, 2014). A study conducted by Berry and Davidson (2007) revealed that ventilated - associated pneumonia (VAP) is common among ventilated patients with a mortality rate of 24% to 50%. Ventilated- associated pneumonia according to Ying *et al.* (2011); Berry and Davidson (2007), is common among intubated patients which results in higher mortality, long hospital stay and increased medical bills. Grap and Kleinpell (2014) in their study on oral health and care in the intensive care unit argued that dental plaque can house pathogens if oral care is inadequate. Jones, Newton and Bower (2008) solidified the argument by saying that critically ill patient are usually immune-compromised, hence they are predisposed to oral infections. Abidia (2007) maintained that effects of medications, treatment interventions and presence of devices in the mouth of critically ill patients are detrimental to the oral health of the patient. The normal flora of the oral cavity may include up to 350 different bacteria species with tendencies to colonize different surfaces in the mouth. For example, *Streptococcus mutans* and *Streptococcus sanguis* mainly colonize the dorsal aspect of the tongue, Herpes simplex virus and mump virus as well as Human Immunodeficiency Virus (HIV) has many oral manifestations (Bagget *et al.*, 2007; Davies & Lindsay, 2008).

Berry and Roll (2007) in their study on systematic literature review of oral hygiene practices for intensive care patients receiving mechanical ventilation reported that chlorhexidine gluconate mouth wash has antimicrobial effect which is effective at low concentration. At high concentration, Chlorhexidine gluconate can inhibit the adherence of bacteria on the surface of teeth thereby preventing dental plaque formation (Davies & Lindsay, 2008). Davies and Lindsay (2008) further reported that the relationship between frequency of use of this antiseptic and its reduction in the incidence of pneumonia has not been ascertained, yet it is known that it improves gingival health. The degree of usefulness of hydrogen peroxide as solution for oral care is not yet resolved (Berry & Rolls, 2007). This uncertainty is due to the belief that hydrogen peroxide has tendency to cause drying and as such, has limited use as a mouth rinse for critically ill patients (Berry & Rolls 2007). Berry and Rolls (2007) further explained that tap water should never be recommended for oral care because it is a source of nosocomial infections. Berry and Rolls (2007) discovered that toothbrush is more effective than foam swabs for removing dental plaque. Ransier *et al.* (2008), however opined that foam swab soaked

in chlorhexidine can be used in the case where toothbrush is contraindicated. Berry and Rolls (2007) reported that there is no documentation on the comparison between the various suction devices used to provide oral care. They however, are of the view that flexible suction catheter can be used to remove secretions from the sub-glottal area when rinsing the mouth.

Studies have demonstrated that nurses have good knowledge on the needs for oral care on critically ill patients. In a study conducted by Sara and Amal (2015), about 97.4% of nurses had good knowledge on the importance of oral care for infection prevention. In support of this, study by Ibrahim *et al.* (2015) disclosed that majority of nurses are well informed about oral care. In the discussion of the study conducted by Samira and Zeinab (2016), it was learnt that majority of nurses had the ability to perform oral assessment, knew the importance of oral care and even had the ability to identify the risk factors of poor oral care. To further prove that nurses have good knowledge on importance of oral care, Lin *et al.*, (2011) in their study reported that nurses had elevated score on oral care information. It is wise at this point to say that nurses have good knowledge on importance, risk factors and technique of oral care. But from the reports of Samira and Zeinab (2016); Sara and Amal (2015), it was learnt that majority of nurses had good knowledge mostly on the importance of oral care. This study further revealed the influence of career and educational levels on the knowledge of nurses on the importance of oral care (Samira & Zeinab, 2015). In the same vein, study by Labeau *et al.* (2008), showed that increase in nurses information on oral care occur as a result of participating in programs for oral care provision.

In a study conducted by Sara and Amal (2015) on nurses' knowledge, attitude and practice of oral care for intensive care unit patients, 97.4% of nurses perceived oral care as a high nursing priority while 2.6% showed negative attitude towards oral care. Ying *et al.* (2011) also revealed that majority of nurses agreed that oral care is a high nursing priority for critically ill patients. However, they put less priority on oral care when compared to other nursing activities for critically ill patients. This same study of Ying *et al.* (2011) reasoned that this low priority attached to oral care may be due to higher survival impact of the other activities such as maintenance of respiratory tract patency Ying *et al.* (2011); Furr *et al.* (2007), added that oral care would become least urgent because it has no immediate risk for survival to the patient and nurses had no sufficient time to provide oral care due to their huge workload. In support of the study of Ying *et al.* (2011) and Furr *et al.* (2007), Samira and Zeinab (2016) established that majority of nurses showed negative attitude towards oral care. This report is in contrast to the results showed by Ibrahim *et al.* (2013) who argued that the majority of nurses had a positive attitude. Samira and Zeinab (2016) reasoned that this difference is associated to low level of education among nurses on oral care for ill patients.

The standard procedure of oral care is that oral care is performed once a day or if the patient requires it (Ying *et al.*, 2011). Ross and Crumpler (2007) discovered that practice of oral care increased once education on it is introduced. Ying *et al.* (2011) had earlier informed that the importance of oral care which are included in fundamental nursing curriculum is not stressed by many schools. This simply suggest that there is lack of education on the importance of oral care, hence practice of oral care is poor. Samira and Zeinab (2016) further disclosed that nurses had poor practice and the most frequent duration was less than one minute. Ibrahim *et al.* (2015) reported that mouth swabs was the major equipment used by nurses for oral care. The study of Osman and Aggour (2014) found that six wards out of thirty wards they researched on, used toothbrush and toothpaste for oral care, though all the wards used antimicrobial agent for oral care. Atay and Karabacack (2014) reported that there was no standard for oral assessment, no cleanliness on oral care practice and no frequency of oral care practice.

The provision of effective oral care for critically ill patients is always challenging. The complexity of the patient's other treatments and care may result in oral care gaining lower priority than other aspect of care (Jones, Newton & Bower, 2008). In the study conducted by Berry and Davidson (2007), barriers to oral care were identified as mechanical, communication and nurse's perceptions. Trieger (2010) whose report is also related to that of Berry and Davidson (2007) itemized endotracheal tube, oral airway, oral gastric tube and temperature probe as the mechanical barriers. It is a simple idea that collection of these devices would pose challenge to even an experience nurse. He noticed that mouthwash and foam swabs are always available instead of

toothbrush. It is ugly to also note that the available toothbrush are always too large and become not easily accessible (Furr, Binkley, McCreun & Carrico, 2007).

Communication barriers includes failure to communicate the procedure to the patient before commencing it. This makes the patients, though critically ill to resist the procedure. Studies have shown that oral care can be made easier if patient is informed about the procedure and he understands the intention. However non-compliance may also be associated with effects of sedation medication (Berry & Davidson, 2007). The view that oral care is an unpleasant task suggests that perception towards it is poor. This is supported by the report of a study conducted by Munro *et al.* (2014). In the study, intensive care nurses were asked to rate the priority they attached to oral care as compared to other nursing care. The study revealed that nurses rated oral care at a mean of 53.9 on a 100 - point scale. Berry and Davidson (2007) reasoned that the low prioritization of oral care has connection with lack of appreciation of the importance of oral care by registered nurses.

The Health Belief Model which was used to direct the study suggests that acknowledgement of both perceived susceptibility and perceived severity must exist before a perceived threat becomes sufficient to motivate a readiness for action and behavior change. If students who are caring for critically ill patients perceive that the patient would suffer infection, septicemia and even death if she does not give the patient oral care, it will motivate the student to practice oral care for the critically ill patients. The modifying factors such as religion, beliefs, student perception, level of education and knowledge may also influence the attitude and level of practice of oral care by these students.

Research Setting: The study was conducted in University of Calabar Teaching Hospital (UCTH), a tertiary health care facility located in Calabar Municipality of Cross River State, Nigeria. The hospital serves as a clinical setting for teaching medical, nursing, medical laboratory science, radiography and other health related course students. It also provides specialist clinical services as well as promotion of scientific knowledge through research. It also serve as a referral hospital for other primary and secondary healthcare facilities within the catchment areas. The hospital is also made up of twenty-five (25) wards and units with 257 nursing staff.

Methodology: The study adopted a descriptive survey design. One hundred and eleven (111) nursing students currently in their 400 and 500 levels of study in the department of nursing science of the University of Calabar (UNICAL), Nigeria, were selected for the study. The selection was done using convenience sampling technique, as those students met on the three duty shifts throughout the period of the study participated. These students were those undergoing their clinical practice in male orthopedic ward, male medical ward, female medical ward and intensive care unit, where they were exposed to nursing critically ill patients for not less than six months.

A self-developed structured questionnaire comprising sections A to E was used to elicit information from the respondents on socio-demographic data, knowledge on the importance of oral care for critically ill patients, attitude of Nursing students towards oral care for critically ill patients, practice and barriers to practice of oral care for critically ill patients by nursing students respectively. Face and content validity of the research instrument was ensured as the instrument was in line with the research objectives, while the reliability was ascertained through a test re-test method using Cronbach's alpha achieving reliability coefficient of 0.76 which was good enough for the study. Section C was made on a four (4) points likert scale of Strongly Agree (SA), Agree (A), Disagree (D), Strongly disagree (SD) with scores ranging from one to four (1 to 4) on negative worded items.

Permission for the study was obtained from the Management of UCTH, Calabar, the respondents were adequately informed about the study and its objectives, and their consent were obtained. They were assured of anonymity and confidentiality throughout the study. The researchers personally administered the questionnaire to the respondents.

Data analyses procedure: Data collected for the study were entered and analysed on personal computer using the Statistical Package for Social Sciences (SPSS version 21.0). Results were expressed in

percentages and presented in tables and charts (Bar chart) while the hypotheses was tested using the Pearson Product Moment Correlation Coefficient at a level of 0.05 significance, implying 95% confidence limit.

Knowledge score of 50% and above denotes good knowledge, while <50% denotes poor knowledge.

A score of 50% and above when summing (Disagree + Strongly Disagree) for the negative worded items denotes good attitude, while a score of <50% denotes Poor attitude.

Practice is good when 50% of the students and above actually performs oral care on critically ill patients, oral care is carried out at least once a day on each critically ill patient.

Results:

TABLE 1: Showing Socio-demographic data of the respondents

Variables	Frequency	Percentage (%)
Age		
15 - 24 years	55	49.5
25 - 34 years	48	43.2
35 -44 years	7	6.3
45 and above	1	0.9
Sex		
Male	22	20
Female	89	80
Marital status		
Single	87	78.4
Married	24	21.6
Divorced	0	0
Widow/widower	0	0
Year of study		
400 level	56	50.5
500 level	55	49.5
Duration of practical experience on the ward		
6 to 12months	72	65
Above 12 months	39	35
Total	111	100

Majority of the respondents 55(49.5%), were between the ages of 15-24 years, 89(80%) were females, and 87(78.4%) of them were single. 56(50.5%) of the respondents were in their 400 level of study, and 55 (49.5%) were in their 500 level. On the duration of clinical exposure to caring for the clinically ill patients, 72(65%) had 6 to 12month exposure while 39(35%) had above 12 months exposure.

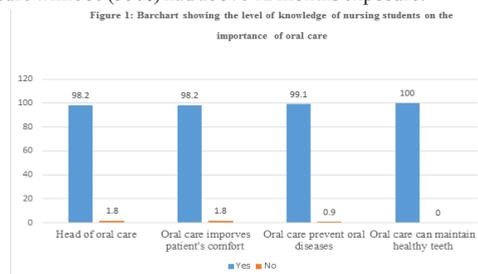


Figure 1 above shows that 109 (98.2%) of the respondents indicated that they have heard of oral care in the course of their training while 1.8% of the respondents said that they have not heard about oral care. 109 (98.2%) indicated that oral care improves patient comfort, 110(99.1%) exhibited the knowledge that oral care can prevent oral disease, while 111(100%) of the respondents accepted that oral care can maintain healthy teeth, gum and mouth. Hence,, the study revealed that most of the respondents had adequate knowledge on the importance of oral care.

TABLE 2: Showing attitudes of nursing students towards oral care

Variables	Frequency (%)				TOTAL
	SA (%)	A(%)	D (%)	SD(%)	
Oral care is not a high priority.	4 (3.6)	7 (6.3)	48 (43.2)	52 (46.8)	111 (100)

Oral care is an unpleasant task.	5 (4.5)	20 (18.0)	40 (36.0)	46 (41.1)	111 (100)
Oral care is less important compared to other Nursing care procedures eg. physical assessment, bowel and bladder care, bed bath.	4 (3.6)	18 (16.2)	50 (45.0)	39 (35.1)	111 (100)
Oral care has the least impact on the survival of patient compared to other	8 (7.2)	30 (27.0)	42 (37.8)	31 (27.9)	111 (100)
Nursing Care.					
Oral care should not be considered when there is insufficient time.	8 (7.2%)	3 (2.9%)	42 (37.8%)	30 (27.0%)	111 (100)

Summary: A score of 50% and above when summing (Disagree + Strongly Disagree) for the negative worded items denotes good attitude.

From table 2 above, responses to the negatively worded items above revealed thus; oral care is not a high priority, 52(46.8%) of the respondents strongly disagreed and 48(43.2%) disagreed. The response to the question that bordered on whether oral care is an unpleasant task, records that 46 (41.1%) of the respondents strongly disagreed and 40(36.0%) disagreed. 39(35.1 %) of the respondents strongly disagreed to the item that oral care is less important compared to other nursing care such as physical assessment, bowel and bladder care, bed bath, 50(45.0%) disagreed. To know whether oral care has the least impact on the survival of patients compared to other nursing care, 31(27.9%) of the respondents strongly disagreed, and 42(37.8%) disagreed. On whether oral care should not be considered when there is insufficient time, 30(27.0%) of the respondents strongly disagreed, and 42(37.8%) disagreed. These imply that the students have good attitude towards oral care.

Table 3: Showing practice of oral care by student nurses

Variables	Frequency (%)		
	Yes	No	Total
Have you ever performed oral care critically ill patient?	66 (59.5%)	45 (40.5%)	111 (100%)
If YES to question above			
How often do you perform oral care on critically ill?			
Once a day	20 (30%)		
Twice a day	6 (9%)		
Whenever the need arises	10 (15%)		
Whenever the is time	30 (45%)		

From table 2 above, 66(59.5%) of the students under study actually performed oral care on critically ill patients, out of which 20(30%) respondents carried out oral care once a day, 6(9%) 6 respondents carried out oral care twice a day, 10 (15%) respondents carried out oral care whenever the need arises and 30(45%) whenever there is time, throughout the period of their exposure to nursing critically ill patients. these findings imply poor practice of oral care on critically ill patients among student nurses.

Figure 2: Bar chart showing the barriers to practice of oral care by student nurses

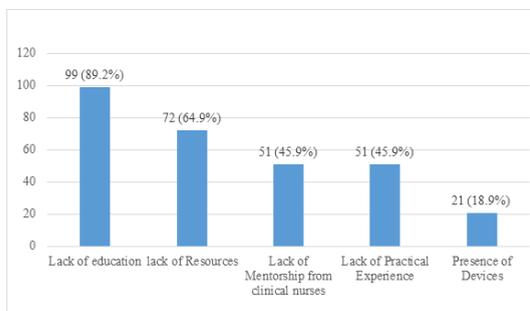


Figure 2 above shows the barriers to practice of oral care on critically ill patients by the nursing students in UCTH, Calabar. The barriers as revealed by the study were lack of education on oral care 99(89.2%), lack of resources 72(64.9%), clinical nurses not practicing oral care 51(45.9%), lack of practical experience by student nurse on oral care 51(45.9%), while only 21(18.9%) of the respondents maintained that presence of devices in the mouth of critically ill patients is a barrier to practice of oral care on critically ill patients.

Result for null hypothesis testing:

Ho: There is no significant relationship between level of knowledge and attitude of nursing towards practice of oral care for critically ill patients in UCTH, Calabar.

Table 4: Pearson product moment correlation analysis of the relationship between the level of knowledge and attitudes of nursing students towards the practice of oral care.

Variables	ΣX	ΣX ²	ΣXY	r-vale
	Σy	Σy ²		
Level of knowledge and attitude (x)	2341	6124		
			67338	.632
Practice of oral care (y)	3036	9156		

*Result significant at, P<.05 df=109, r-crit=.197

The result of analysis reveals that the calculated r-value of .632 is greater than the critical r-value of .197 at .05 level of significance with 109 degrees of freedom. This shows that the result of analysis is statistically significant since the calculated value is higher than the critical value. This implies that there is a significant relationship between level of knowledge and attitude of student nurses towards the practice of oral care for critically ill patients in UCTH, Calabar. Therefore, the null hypothesis in this study which states that there is no significant relationship between the level of knowledge and attitude of nursing students toward practice of oral care on critically ill patient in UCTH, Calabar is rejected.

Discussion of findings:

From the findings in this study, it was deduced that majority of the students (98.2%) have knowledge of oral care for the critically ill patients in UCTH, Calabar. This result is in line with the findings from studies of (Sara & Amal,2015;Ibrahim *et al*, 2015) which revealed a good knowledge (97.4%) on the importance of oral care by nursing students. It was also observed from this study that majority (98.2%) of the respondents knew that oral care improves comfort, and prevents oral disease (99.1%). These findings agree with the findings of the study conducted by Samira and Zeinab (2016) which revealed that majority of the nurses knew the importance of oral care. No study reviewed contrasted the findings of this study on the knowledge of nursing students on oral care for critically ill patients.

The study findings also revealed that the nursing students have a positive attitude towards oral care of the critically ill patients, as they perceived oral care as a high priority in nursing practice, they neither perceived oral care as unpleasant task, nor viewed it to be least important than other nursing procedures in the care of the critical ill patients. These finding are supported by the findings from the study by Sara & Amal (2015), which revealed that majority of nurses agreed that oral care is a high nursing priority for critically ill patients. Also in line with the study findings is the findings from the study by Ibrahim *et al* (2013), who argued that the majority of nurses had a positive attitude towards oral care. However, findings from the study by Ying *et al*. (2011); Furr *et al*.(2010), disagreed with this findings, as their study revealed that nurses attach low priority to oral care when compared to other nursing activities for critically ill patients, while tracing the reasons for this attitude of nursing students to no sufficient time to provide oral care due to their huge workload. Also Samira and Zeinab (2016), in their study established that majority of nurses showed negative attitudes towards oral care of the critically ill. This same study of Ying *et al*(2011) reasoned that this low priority attached to oral care when compared to other nursing activities for critically ill patients may be due to higher survival impact of the other activities such as maintain of respiratory tract. Ying *et al* (2011); Furr *et al*. (2007), added that oral care would become least urgent because it has no immediate risk for survival to the patient and nurses had no sufficient time to provide oral care due to their huge workload.

Regarding the practice of oral care on critically ill patients, the study findings reveal that a good number of respondents actually perform oral care on critically ill patients 66(59.5%), on the other hand only very few of them claimed to carry out oral care on critically ill patients whenever the need arises, or at least once a day while a vast majority claimed they perform it whenever they feel there is time for such procedure. This is not in line with the standard procedure of once a day or whenever the need arises (Ying et al, 2011), hence it denotes poor practice of oral care by the nursing student, and contradicts the earlier findings of viewing oral care on critically ill as a priority compared to other nursing activities. These findings corroborates the findings of the study by Samira and Zeinab (2016) who disclosed that nurses had poor practice and the most frequent duration of oral care was less than one minute. In line with this, Atay and Karabacak (2014) reported that there was no standard for oral assessment, no cleanliness on oral care practice and no frequency of oral care practice. This poor practice of oral care as revealed by this study could be traced to lack of education and emphases on the importance of oral care, lack of performance of oral care by the clinical nurses to serve as a form of mentorship to the students, as well as giving priority to other nursing procedures viewed as lifesaving to the patients. In the same line, Ying et al (2011) informed that importance of oral care is not stressed by many schools and as such, oral care practice is poor.

The main barriers identified by the study to the practice of oral care on critically ill patients by the nursing students includes; lack of education, lack of resources, and lack of mentorship by the clinical nurses. These are in line with the findings of Ibrahim et al (2015) who reported that mouth swabs was the only major equipment used by nurses for oral care which implies lack of oral care resources, the report of Ying et al (2011) which identified lack of education as one of the barriers to the practice of oral care.

The result of the analysis of the null hypothesis which stated that there is no significant relationship between nursing students' knowledge and attitude towards oral care revealed a significant positive relationship between level of knowledge and attitude of nursing students towards the practice of oral care for critically ill patients in UCTH, Calabar. (Calculated r - value of .632 is greater than the critical r - value of .197 at .05 level of significance with 109 degrees of freedom). Therefore, the null hypothesis is rejected. To further buttress this finding this same study had identified lack of education as a barrier to the practice of oral care for critically ill patients. This finding is strongly supported by the findings of several studies (Amal,2015; Ibrahim et al, 2015; Samira & Zeinab,2016; Ying, et al Furr, et al) which revealed that knowledge of the importance of oral care on critically ill patients denotes positive attitude and good practice of oral care.

Conclusion

Oral health is influenced by a number of factors such as dental plaque, presence of oral microbial flora and oral immunity. Nursing students' knowledge level on the mechanism of oral diseases is very important in the management of critically ill patients. The result of this study has shown that nursing students in University of Calabar Teaching Hospital possess good knowledge of oral care, and also demonstrated positive attitudes towards the practice of oral care on critically ill patients. However, several barriers pose hindrance to good practice. These include lack of education on oral care, lack of resources, lack of practical experience and mentorship. Emphases on educational training of the nursing students on oral care through clinical practice, seminars and simulations, so as to equip them for practice therefore becomes imperative. Also, hospital management should ensure availability and adequate provision of oral care equipment to enhance practice.

Recommendations

Based on the findings of this study, the following recommendations were made;

1. Education and training of nursing students on oral care should be emphasized and hands on practice should be encouraged. This will improve knowledge and enhance positive attitude of students towards oral care practice.
2. The management of University of Calabar Teaching Hospital should endeavour to provide adequate equipment for the performance of oral care in the hospital by nursing students.
3. Practicing clinical nurses should be encouraged to carry out the routine oral care on critically ill patients as to mentor student nurses on the procedure.

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