



## Attitude Towards Oral Care And Practicing Level For Hospitalized Patients Among Nursing Students: A Questionnaire Survey

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### Abstract

Introduction: oral hygiene maintenance for hospitalized patients has a significant impact on the patients overall clinical outcome and general health. Poor oral hygiene can affect the quality of life. Hence, it is important for nurses to maintain oral hygiene in hospitalized patients. The nursing students play an important role in oral health promotion. It is necessary for them to be aware of evidence based oral hygiene protocol. Aim: this study aims to assess the knowledge, attitude and practice among nursing students regarding oral care practice for hospitalized patients before and after conducting a lecture and workshop on oral hygiene. Materials and method: A descriptive cross-sectional study was conducted at Government nursing college, Aurangabad. A questionnaire containing 20 questions was distributed among 40 students. An informative lecture and workshop was conducted by Department of Periodontology. A pre- and post- workshop same questionnaire was distributed. Responses were coded and analyzed. Results: Many of the students were able to enlist the signs and symptoms of common dental diseases after workshop. After workshop many students started using toothbrush and chlorhexidine for patients (p 0.018) and were performing oral hygiene for patients regularly. Students agreed that lack of knowledge was one of the main barriers while performing oral hygiene for patients, after workshop they were familiarized with evidence based knowledge and proper tools to maintain oral hygiene (p 0.00). All students got knowledge about oral health assessment tools, performing oral hygiene for intubated patients, and oral manifestation of certain systemic diseases & drugs. All students agreed that oral health has significant impact on patient's clinical outcome. Majority of students agreed that they require seminars and workshops to improve their knowledge regarding oral health to hospitalized patients. Conclusion: The survey provided useful insights on the oral hygiene knowledge and practices of nursing students for hospitalized patients. The findings indicate that the students lacked adequate knowledge and were ill equipped to take care of oral health of hospitalized patients. With proper training nursing students were able to provide proper oral health care. By training nurses for oral health care, prevalence of oral diseases and hospital acquired pneumonia in hospitalized patients can be minimized.

**Keywords:** Nurses, Oral hygiene, Knowledge, Assessment

### Introduction

Oral hygiene is defined as the practice of keeping the oral cavity healthy through cleaning of gums, teeth, tongue, lips and dentures (1). William Osler said "mouth is mirror of general health." (2). Oral infections may play a part in the pathogenesis of

many systemic diseases.(7) Poor oral hygiene causes oral discomfort, pain, & affects nutritional status of hospitalized patients. In hospitalized patients, if oral care is not given within 48hrs of admission, there is shift of oral microbes from nonpathogenic to pathogenic. The dental plaque in oral cavity becomes

sources of bacteria and toxins. (3). Due to type & consistency of food consumed during hospitalization, reduced salivary flow, neglected oral hygiene, biofilm and oropharynx becomes reservoir of growth of microorganisms leading to caries and periodontal disease. (4) If the plaque gets access to blood stream or the lung it may causes cardiac or lung infections. Emery KP et al showed that oral hygiene is significantly associated with prevention of hospital associated pneumonia in patients with endotracheal tube. (5) Hospital associated pneumonia & ventilator associated pneumonia are considered as first leading cause of death in hospitalized patients. (3). Nurses are principal health care provider for patients admitted to hospitals. They play important role in health promotion & preventive information dissemination. Provision of oral care is one of their duties and one of the fundamental procedure that have adverse effect on patient's wellbeing & general health. Their role in maintaining the oral health of patients is undeniable. For that they should be aware of standard protocol and information to deliver appropriate oral care. It is important that their oral health knowledge should be good. However in their training, oral care may not be adequately covered or given a high priority. (6) As a result, oral care is often left to the patients themselves. However, non-ambulatory patients depend on nursing staff for the maintenance of oral hygiene. Hence they are expected to have adequate knowledge about common dental diseases, identification, referral and maintenance of oral hygiene. It is primary concern of dental professionals to impart a positive oral health knowledge & behavior in nursing staff. The simple concept of oral hygiene should be equally understood and put into practice by them. With proper training and knowledge nurses can play an important role in maintaining oral hygiene and educating patients.

The aim of the present study was to assess the knowledge, attitude and practice among nursing students regarding oral care practice for hospitalized patients before and after conducting a workshop.

**Results :**

**Table 1 showing knowledge of nursing students regarding healthy mouth, caries, periodontal disease and pre-malignant lesion**

	Pre-lecture	Post-lecture	p value
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**Material and Methods:** The study was conducted by department of Periodontology, Government Dental College & Hospital, Aurangabad in association with Government nursing college, Aurangabd. Total 40 students of 1<sup>st</sup> year of nursing college were included in this study. A descriptive cross-sectional study was used. Total 20 questions were designed based on literature and existing questionnaire. The questionnaire included nurse's perception of performing oral hygiene in patients, identification of common oral diseases, aids used and barriers while performing it. The questions were provided in English language.

After obtaining ethical approval, questionnaire was distributed among nursing students. An average of 10 minutes was needed to complete the questionnaire.

The lecture and workshop was conducted by faculty of Department of Periodontics of Government Dental College & Hospital, Aurangabad in July 2022. The lecture was conducted on oral hygiene practice for nurses which included importance of oral hygiene, identification of common dental diseases such as caries, periodontal diseases and precancerous lesions, effect of good oral hygiene on systemic health, oral manifestation of systemic diseases and certain drugs. Workshop was conducted on different brushing techniques, use of interdental aids and practicing oral hygiene in unconscious and intubated patients. Again the questionnaire was distributed among nursing students after lecture and workshop and data was collected.

**Method of statistical analysis:** Data obtained was entered and sorted in Microsoft Excel (v.2013). Statistical analysis was performed using Statistical package for social sciences (SPSS) software (v.2.1.0). Frequency statistics was performed for each item of the questionnaire for pre and post lecture results. Pre and post comparison of the questionnaire responses was done using Paired t-test to assess significant differences. All statistical tests were performed at 95% confidence intervals; keeping p value of less than 0.05 as statistically significant.

Questions and Responses		Frequency (n)	Percent (%)	Frequency (n)	Percent (%)	
Signs of healthy mouth	Clean teeth	8	20.0	-	-	0.083
	Pink oral cavity	3	7.5	-	-	
	Moist lips and oral cavity	2	5.0	-	-	
	Uncoated tongue	2	5.0	-	-	
	No malodor	2	5.0	-	-	
	Absence of pain	1	2.5	-	-	
	No ulcers	6	15.0	-	-	
	Clean dentures	3	7.5	-	-	
	Multiple options chosen	10	2.5	13	32.5	
	All of the above	3	7.5	27	67.5	
Signs and symptoms of dental caries	Brown pigmentation	5	12.5	2	5.0	0.749
	Toothache	6	15.0	-	-	
	Sensitivity	1	2.5	-	-	
	All of the above	21	52.5	36	90.0	
	Multiple options chosen	7	2.5	2	5.0	
Signs and symptoms of periodontal disease	Bleeding gums	12	30.0	-	-	0.134
	Halitosis	3	7.5	-	-	
	Redness and swelling of gums	5	12.5	2	5.0	
	All of the above	10	25.0	28	70.0	
	Multiple options chosen	10	10.0	10	25.0	
Signs and symptoms of pre-cancerous lesion	Bright red patches	5	12.5	-	-	0.05*
	White patches	5	12.5	-	-	
	Burning sensation	1	2.5	-	-	
	Difficulty in mouth opening	2	5.0	-	-	
	Long standing ulcer	5	12.5	-	-	
	Thickening of oral mucosa	3	7.5	-	-	
	All of the above	11	27.5	33	82.5	
	Multiple options chosen	8	2.5	7	17.5	

\*p value &lt;0.05 statistically significant

**Table 2 showing knowledge of nursing students regarding importance of healthy mouth, fibrous food intake and aids used and knowledge of different brushing techniques**

Knowledge of different brushing techniques	Yes	8	20	35	87.5	0.000*
	No	32	80	5	12.5	
Awareness for interdental aids	Dental floss	5	12.5	6	15	0.000*
	Proxabrush	5	12.5	5	12.5	
	Toothpick	20	50	-	-	
	Don't know	7	17.5	-	-	
	Multiple options chosen	3	7.5	29	72.5	
	It has cleansing action	9	22.5	1	2.5	0.000*
	Inhibits growth of oral bacteria	5	12.5	1	2.5	
Importance of fibrous food for oral hygiene	Increases saliva production	11	27.5	1	2.5	0.000*
	Don't know	10	25	-	-	
	Multiple options chosen	5	7.5	37	92.5	

Questions and Responses		Pre-lecture		Post-lecture		p value
		Frequency (n)	Percent (%)	Frequency (n)	Percent (%)	
Importance of maintaining healthy	Prevention of infection	18	45.0	2	5.0	0.329
	Reduced bad breath	1	2.5	-	-	
	Part of daily activity	7	17.5	-	-	

<b>mouth</b>		14	2.5	13	32.5	
	<b>All of the above</b>	-	-	25	62.5	
<b>Aids used to clean patient's oral cavity</b>	<b>Cotton and gauze</b>	13	7.5	-	-	0.018*
	<b>Toothbrush and toothpaste</b>	7	17.5	7	17.5	
	<b>CHX mouthwash</b>	1	2.5	-	-	
	<b>None</b>	16	40.0	-	-	
	<b>Multiple options chosen</b>	3	2.5	33	82.5	

\*p value <0.05 statistically significant

**Table 3 showing barriers while performing oral hygiene, awareness regarding oral manifestation of systemic diseases and certain drugs and use of oral health assessment tool**

<b>Questions and Responses</b>		<b>Pre-lecture</b>		<b>Post-lecture</b>		<b>p value</b>
		<b>Frequenc y (n)</b>	<b>Percent (%)</b>	<b>Frequency (n)</b>	<b>Percent (%)</b>	
<b>Barriers for performing oral hygiene for patients</b>	<b>Uncooperative patients</b>	6	15.0	1	2.5	0.000*
	<b>It is an unpleasant task</b>	3	7.5	0	0	
	<b>Lack of knowledge</b>	10	25.0	1	2.5	
	<b>Intubated patients</b>	2	5.0	1	2.5	
	<b>Multiple options chosen</b>	19	7.5	37	92.5	
<b>Description of oral health care task</b>	<b>highly important</b>	7	17.5	12	30.0	0.000*
	<b>important</b>	4	10.0	9	22.5	
	<b>Necessary to maintain</b>	5	12.5	10	25.0	
	<b>part of routine</b>	2	5.0	2	5.0	
	<b>repulsive task</b>	4	10.0	3	7.5	
	<b>should be done by patients</b>	4	10.0	1	2.5	
	<b>somewhat important</b>	4	10.0	0	0.0	
	<b>unpleasant task</b>	10	25.0	3	7.5	

<b>Good oral hygiene affects patients clinical outcome</b>	<b>Yes</b>	40	100.0	40	100.0	-
<b>Awareness regarding oral manifestation of systemic diseases</b>	<b>Yes</b>	5	12.5	33	82.5	0.000*
	<b>No</b>	35	87.5	7	17.5	
<b>Awareness regarding effect of certain drugs on oral cavity</b>	<b>Yes</b>	2	5.0	30	75.0	0.000*
	<b>No</b>	38	95.0	10	25.0	

<b>Awareness of oral health assessment tool</b>	<b>Yes</b>	17	42.5	38	95.0	0.001*
	<b>No</b>	23	55.0	2	5.0	
<b>Which oral health assessment tool they are aware of</b>	<b>Oral health assessment guide</b>	8	20.0	12	30.0	0.000*
	<b>Jenkins oral calculator</b>	1	2.5	-	-	
	<b>Heals</b>	3	7.5	-	-	
	<b>Don't know</b>	23	57.5	1	2.5	
	<b>Multiple options chosen</b>	5	10.0	27	7.5	

Diagram 1 showing frequency of providing oral hygiene to patient before and after workshop

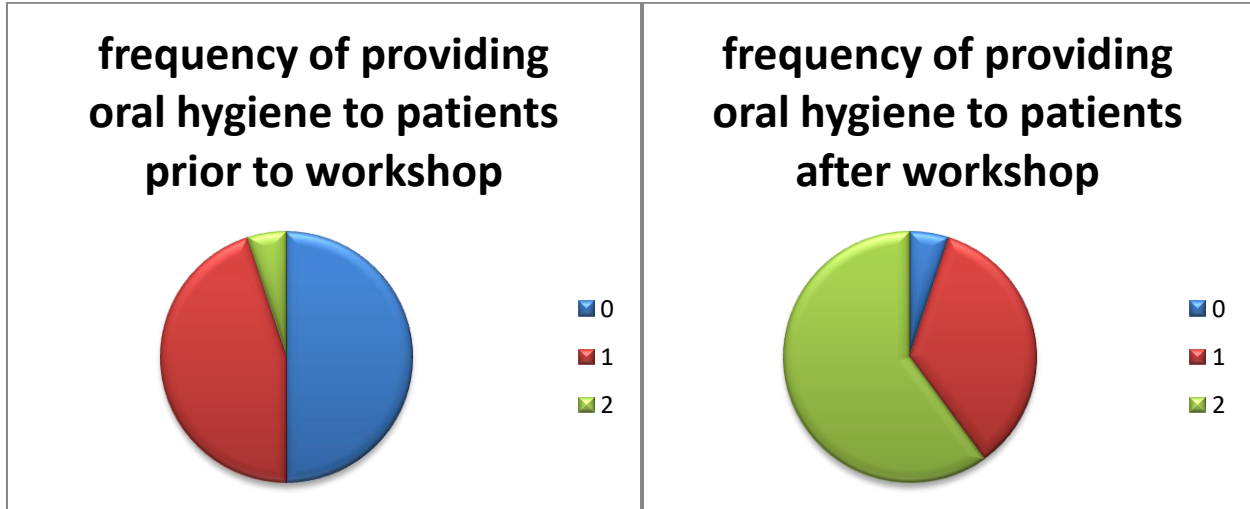
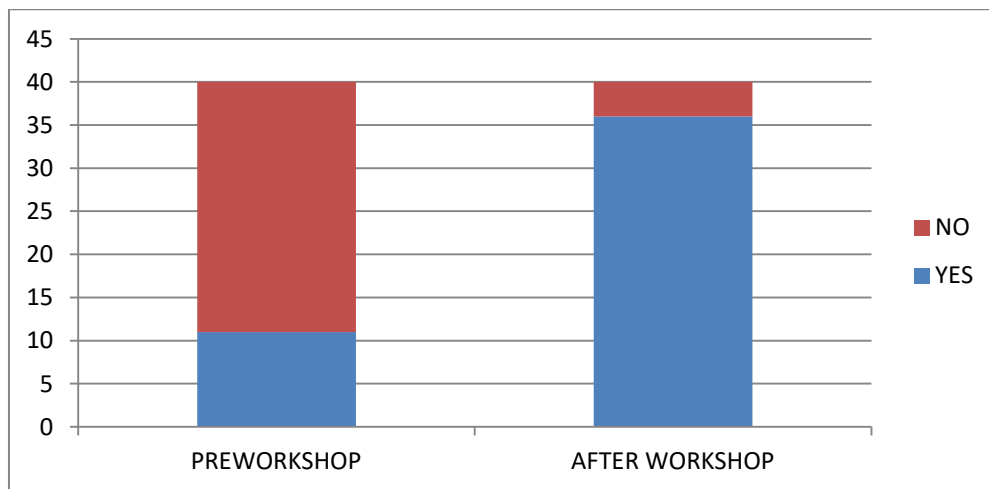
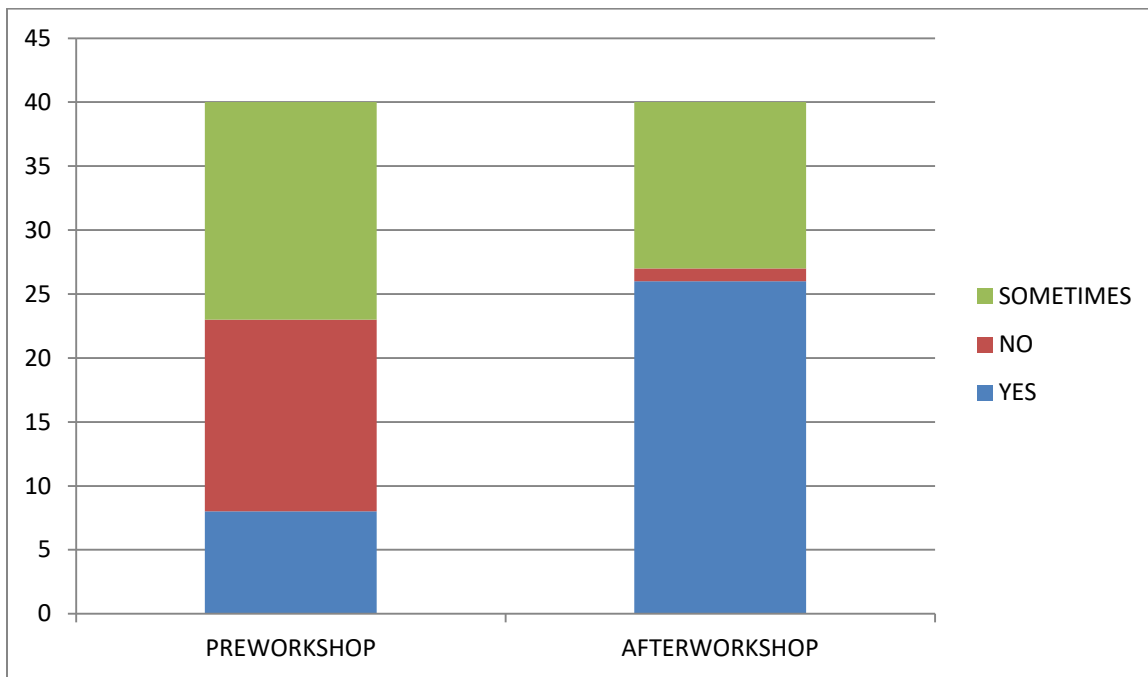


Chart 1 showing Presence of adequate knowledge and skills to provide oral hygiene to unconscious patients before and after conference



**Chart 2 showing Do they give specific instruction to maintain oral hygiene during discharge before and after workshop**



**Discussion:**

Oral care of hospitalized patients is of utmost importance for maintaining oral health. Expected role is to be played by the nursing students, therefore a need to assess the oral health knowledge, attitude and practice was required. Oral care should be routine part of daily nursing activity and for that nurses should be well trained and informed.

Most of the participants were familiar with the signs of healthy mouth. This results were similar to that found by Thomas Castello et al. (7) Along with signs of healthy mouth, nurses should be aware of signs of common dental diseases such as dental caries, periodontal diseases and oral pre-malignant lesions and for referral of patient to dental professionals. Most of the participants were using cotton and gauze for cleaning of oral cavity. The findings were in consistent with that found by Dagnew et al. and Aboalizm et al.(8,9) Chlorhexidine is potent antimicrobial agent used for maintain oral hygiene. Most of the participants had neither used nor heard the name of chlorhexidine. There was lack of use of toothbrush. Oral care was inadequate in these areas. These findings were similar to Dagnew et al.(8) After conducting the workshop, all the participants were using toothbrush and toothpaste for cleaning oral cavity, and were using chlorhexidine mouthwash

regularly in patients. Most of the participants were either not performing or only once they were providing oral hygiene for patients. These findings were consistent with Dagnew et al. (8) After workshop; most of them started performing oral hygiene twice a day for patients. Most of the participants were unaware about the flossing, which was in contrast to study conducted by G. Radha et al., where participants had good knowledge about floss and flossing techniques. (10)

Participants selected option of uncooperative patients and lack of knowledge most commonly while describing barriers for performing oral hygiene. Similar findings were observed by Chan et al.(11) Third most selected option was lack of equipment, similar results were obtained by Ibrahim SM et al. and Aboalizm et al. (9,12) Participants also referred these as an unpleasant task. Similar results were obtained by Monica et al., Perrie H et al., and Dagnew et al. (8,13,14) Most of the participants described the task of oral hygiene maintenance as highly important. And they agreed that it has effect on patient’s clinical outcome and general health. Similar results were obtained by Monica et al. (13) It has also been observed that participants lack knowledge on effect of certain drugs and systemic disease on oral cavity prior to workshop. After workshop significant numbers of participants were



able to name such diseases and drugs. Oral health assessment tools are important for maintenance of recording data. They are described as tools, instruments, guides, and sheets for oral cavity inspection or triage. Various oral health assessment tools are available for non-dental health care professionals. The findings suggested that most of the participants were unaware about these tools. Use of oral health assessment tool showed improved patient oral assessment score by Ames NJ et al. (15) After workshop nursing students were aware about such tools and were using them for record maintenance.

For intubated patients, the breathing tube is an aggravating factor, which can be colonized by bacteria, leading to the installation of nosocomial pneumonia, a major problem daily faced in ICUs. Intubated and unconscious patient's oral hygiene is mandatory for prevention of such diseases. Most of the participants had limited knowledge in providing oral care to intubated patients. Similar results were obtained by Rodrigues et al. (4) Most of the participants agreed that they required continuous knowledge and training in providing oral health care to hospitalized patients. The similar results were obtained by Monica M et al. (13)

### Conclusion:

Oral care is important part of nursing care. However, the surveys showed that nurses lack adequate knowledge and were ill equipped to provide oral care. But by arranging workshop, seminars and equipping them with oral health care set up, nurses will be able to provide standard oral care and it will prevent development of dental diseases as well as some systemic diseases in hospitalized patients. Dental professionals should train nurses for oral care task.

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