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Oral health knowledge and attitude among nursing students and staff in Mahasamund City, India

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ABSTRACT

Introduction: Oral health is a human right, an integral part of general health and essential for overall wellbeing and quality of life. Proper oral health care reduces premature mortality Nurses act as a link between admitted patients and doctors in the hospital. Public health nurses can educate people about health subjects. The study was conducted to assess oral health knowledge and attitude among nursing students and staff in Mahasamund city, India.

Aims and Objectives: To assess the level of knowledge and attitude regarding oral health among nursing students and staff in Mahasamund City, India and to identify gaps that can be addressed through targeted educational interventions.

Materials and Methods: The study was conducted at five nursing colleges in Mahasamund city, India. A total of 281 nursing students and staff from nursing colleges were included and requested to complete 25 closely ended questionnaires. A written informed consent was taken. The data collected was analysed using Statistical Package for the Social Sciences 16.0 and frequencies were calculated for each item in the questionnaire.

Results: 53% were of the view that toothpaste and brush is an ideal material for brushing. More than (73%) participants responded that gum infections were responsible for bleeding from gums. Almost 6.4% reported that brushing should be done twice daily. The majority of those (65%) had sufficient knowledge for detection of Dental Caries. Almost 66% had sufficient knowledge about Public Health Dentistry. Most of the (70%) were interested in doing work at the Public Health Dentistry.

Conclusion: The overall oral health knowledge and attitude of nursing students and staff was insufficient. Only half of the study participants were aware of various aspects of oral health. Nurses should have basic knowledge about oral health and disease. It is recommended that a dental curriculum should be introduced in the nurses undergraduate training program which can be housed in Public Health Dentistry department as a part of community nursing.

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1. Introduction

Oral health is a human right, an integral part of general health and essential for overall wellbeing and quality of life. The World Health Organization (WHO) defines oral health as "a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal disease,

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tooth decay, tooth loss and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking and psychosocial wellbeing". It includes dental caries, periodontal disease, tooth loss, oral cancer, orodental trauma, noma and birth defects such as cleft lip and palate. The World Health Organization estimated that oral diseases affect nearly 3.5 billion people around the world. Oral cancer includes cancers of the lip, other parts of the

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mouth and the oropharynx and the combined rank as the 13^{th} most common cancer worldwide. The global incidence of cancer in the lip and oral cavity is estimated to be 377 713 new cases and 177 757 deaths in 2020. ^{1,2}

The majority of oral diseases share modifiable factors with the leading noncommunicable diseases (cardiovascular diseases, chronic cancer, respiratory diseases and diabetes). These risk factors include tobacco use, alcohol consumption and high sugar diets, all of which are increasing worldwide. Much Evidence has proved that there is a proven relationship between oral and general health. 1,3,4 It is reported, for example, that diabetes is linked with the development and progression of periodontitis.⁵ Moreover, there is a causal link between high consumption of sugars and diabetes⁶, obesity and dental caries.⁷

Proper oral health care reduces premature mortality. A detailed oral examination can detect signs of nutritional deficiencies as well as a number of general diseases like microbial infections, immune disorders, injuries and oral cancer. For example, the salivary glands are a model of the exocrine glands, and an analysis of saliva can provide important clues to general health or diseases. ^{8,9}

Dental caries is a major oral health problem in most industrialized countries at present. About 60% schoolchildren and the majority of adults are affected by Dental Caries. Prevalence of Dental Caries is very high among oral diseases in several Asian and Latin American countries and it appears to be less common and less severe in most African countries. Signs of gingivitis are prevalent among children and adolescents, while adults suffer with the initial stages of periodontal diseases worldwide. In 35- 44 years age group, 5-20% population suffer with severe periodontitis and Nearly 2% of youth are affected by Juvenile Periodontitis during puberty. ¹⁰

India is a developing country located in South East Asia, which has the largest population in the World. Prevalence of Dental Caries is increasing in India due to changes in life styles and dietary habits. Hassed on an oral health survey conducted by WHO India in 2007–2008, dental caries prevalence ranged from 23.0% to 71.5% for 12-year-olds and from 48.1% to 86.4% for adults in the 35–45 age group. Dental caries ranged from 51.6% to 95.1% in the 65–74 age group. Comparably, the ranges for periodontal diseases in adults and the elderly were 15.32% to 77.9% and 19.9% to 96.1%, respectively. 12

Dental caries and periodontal diseases have been considered to be the most important global oral health burdens. With the combination of community, professional and individual actions, both can be effectively prevented and controlled. In the current scenario, distribution and severity of oral diseases vary in different parts of the world and within the same country. A large number of epidemiological surveys show that there are significant

role of socio-behavioural and environmental factors in oral health

Oral health care is an essential component of medical care for hospitalized patients, which is mainly provided by nurses and medical care professionals; thus, knowledge and awareness of oral health measures for admitted patients are essential and mandatory. Nursing is one such profession within the health care sector that focuses on the care of individuals, families and communities, so they may attain, maintain or recover optimal health and quality of life. Hospitals worldwide differ in terms of the importance and priority they give to providing oral health measures for their hospitalized patients.

Academic programs in nursing have gaps in the knowledge they provide their students with oral healthcare procedures for hospitalized patients. However, some healthcare providers conduct regular educational programs about oral health care for their staff. The main reason behind such programs is to increase oral health knowledge and awareness among healthcare workers. Other healthcare providers have clear guidelines for oral health care for hospitalized patients and residents that vary according to their length of stay and medical conditions.

It is important to ensure that full oral care is provided for long-term patients and those who are physically restricted owing to their medical condition. Deterioration of oral health can adversely affect the medical situation of the patient. When there is inadequate oral care for hospitalized patients, oral health problems such as dental caries, periodontal inflammation, oral abscess can appear. These problems may appear as a result of the patient's medical condition, medication side effects and previous inadequate oral hygiene. Therefore, it is necessary to educate Nurses who deliver bedside care regarding any pathological changes in the oral cavity that can be caused by a patient's medical condition or medication side effects, so as to prevent any deterioration that may lead to other health problems.

People can learn about health topics from public health nurses. They can expand access to care and enhance general health, including dental health. In a nation such as India, where there is a dearth of healthcare facilities and long wait times for sick patients, public health nurses visit local areas in an effort to improve people's health. Since seventy percent of Indians reside in rural areas with little access to healthcare, public health nurses may offer screening services, health education, and preventative care. ¹³

Compared to dentists, nurses are more easily accessible to the public. As a result, nurses can be quite helpful in promoting dental health among Indian citizens. Since only dental surgeons and dental hygienists are employed in India, there is a higher shortage of auxiliary professionals in this country. In multispecialty and dental institutions, nurses play a crucial role. ¹⁴ In the hospital, nurses serve as a liaison

between admitted patients and physicians. 15

A key component of offering patients thorough and efficient care is the oral health expertise of nurses. However, nurses' expertise in oral health varies. While some nurses may possess extensive knowledge in this field, others may just have had official education and training in oral health care. It is imperative that nurses possess a fundamental understanding of oral anatomy, oral hygiene, and prevalent oral health issues in order to deliver appropriate care and make necessary referrals. Nurses' knowledge and proficiency in oral health can be enhanced with chances for ongoing training and professional development.

A low priority was given to dental education among nurses, especially among those with lesser education. ¹⁶Evidence based study suggested that oral care is an important but neglected area of nursing in India. Most of the nurses have insufficient knowledge about oral care. At present, oral care education programs for nurses are very much required in India. By collecting information about the existing oral health knowledge and attitude among nursing students, we can assess their efficiency in promoting awareness about oral health among common Indian people. Keeping this objective in mind, this study was undertaken among nursing students and staff of Mahasamund city.

2. Materials and Methods

The study was conducted from January 4, 2022 to January 8, 2022 in five nursing colleges in Mahasamund city, India. The ethical clearance for this study was obtained from the ethical committee of Rungta Dental College, Bhilai and permission for conducting the study among nursing students was obtained from their respective heads of institutions of the nursing colleges. A written informed consent was taken from all nurses prior to the study.

The total number of nursing students and staff enrolled in these colleges were 281. Students and staff who were present on the day of the survey and those who gave consent for participation were included in the study and a pretested questionnaire was administered to them. The questionnaire consisted of 25 close-ended questions which were adapted from an earlier study. ¹⁴ Questionnaires comprised of four sections related to demography, knowledge of oral health and diseases, oral hygiene practices, dentistry and other related knowledge.

The data collected was analysed using Statistical Package for the Social Sciences version 16.0 and descriptive statistics such as frequencies were calculated for each item in the questionnaire.

3. Results

The total number of nursing students and staff were 281, out of which 258 (92%) presents on the day of the survey

were approached to participate in the study. Out of those participants who gave consent and responded to all 25 items in the questionnaire formed the final sample. The response rate was 89%. The mean age of the participants was 23.7 years (SD 5.8) and most of participants were females (Figure 1).

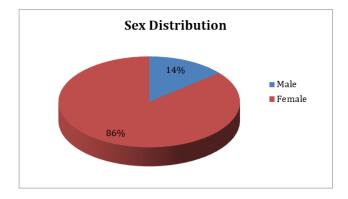


Figure 1: Distribution of the participants according to gender

3.1. Basic oral health knowledge: (Table 1, Figure 1)

60% of respondents answered correctly about the number of deciduous teeth in the oral cavity of children. Almost 81% of the respondents answered that there are 32 permanent teeth in a healthy adult. 44% reported that brushing should start from the 1st year after birth, while 37.2% said that brushing should start from 2nd year after birth and only 2.8% replied six months from birth.

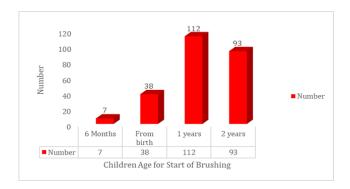


Figure 2: Advised age of children for start brushing

3.2. Oral hygiene practices: (Table 2, Figure 3)

53% of the participants were of the view that toothpaste and toothbrushes are ideal materials for brushing. Charcoal with finger and tooth powder with finger were the ideal materials as per 9.2% and 4.8% respondents, respectively. Most of the respondents (66.4%) reported that brushing should be done twice daily. 58% knew that fluoridated toothpaste should be used. The same number of participants answered

Table 1: Frequency distribution of participants regarding oral health knowledge

Question Number	Questions	Options	Frequency	Percentages
		20	150	60%
1	How many deciduous teeth are there in the human oral cavity?	16	58	23.2%
		32	12	4.8%
		12	31	12%
2	How many permanent teeth are there in human oral cavity?	20	1	0.4%
		28	36	14.4%
		32	202	80.8%
		30	11	4.4%
3		6 Months	7	2.8%
	What age do you advise children to start brushing?	From birth	38	15.2%
		1 years	112	44.8%
		2 years	93	37.2%

Table 2: Frequency distribution of participants regarding oral hygiene

Question Number	Questions	Options	Frequency	Percentage
		Tooth Paste and Brush	133	53.2%
4	What are the ideal materials for brushing?	Tooth Powder and Brush	82	32.8%
		Charcoal and Finger	23	9.2%
		Tooth Powder and Finger	12	4.8%
	How many times should a person brush his teeth every	1 times	25	10%
5		More than 2 times	43	17.2%
	day?	2 times After every meal	166 18	66.4% 6.4%
		Non- fluoridate	64	25.6%
<i>c</i>	What kind of tooth paste	Fluoridated	146	58.4%
6	should a person use?	Both a and b	28	11.2%
		None of the Above	12	4.8%
		Soft	144	57.6%
7	What kind of brush should a person use?	Medium	93	37.2%
7		Hard	11	4.4%
		None of the Above	2	0.8%
		Horizontal	11	4.4%
0	What is the proper brushing method?	Circular	32	12.8%
8		Vertical	62	24.8%
		Both b and c	145	58%
	How often should a person change his toothbrush?	1 month	41	16.4%
9		3 month	115	46%
9		6 month	74	29.6%
		When its bristles get fractured	20	8%
	Do you advise a person to clean his tongue?	It depends on the person	18	7.2%
10		Yes	213	85.2%
10		No	16	6.4%
		Don't know	3	1.2%

that brushing should be done in both circular and vertical methods and soft bristle tooth brush should be used. 46% respondents reported that the brush should be changed after every 3 months. The majority of the respondents (85.2%) said that they will advise the public to clean his tongue.

3.3. Knowledge of oral diseases: (Table 3, Figure 4)

Most of the (73%) participants responded that gum infections were responsible for bleeding from gums and

53% answered that yellow or greenish yellow colour deposition near gum is due to calculus and plaque. 33% respondents agreed that the colour yellow near the gum was due to food deposits. The majority of those (65%) had sufficient knowledge to detect dental caries such as black spots and cavities. Fibrous food is the ideal diet to maintain healthy teeth as per 56% respondents. 58% of respondents reported that a person should visit a dentist every 6 months. 57% respondents said that they will advise to clean gum pads and teeth with plain water, whereas 29.6% would

Table 3: Frequency distribution of participants regarding oral diseases

Question Number	Questions	Options	Frequency	Percentage
	TC 1	Food deposits	84	33.6%
11	If there is yellow or greenish	Calculus and Plaque	133	53.2%
	yellow colour deposit near the gums, what is it?	Don't know	22	8.8%
	the guins, what is it?	Saliva	11	2.8%
		Gums are healthy	21	8.4%
10	If there is bleeding from the	Ulcerated	38	15.2%
12	gums, what is it?	Gums are infected	183	73.2%
		Don't know	7	3.2%
		Black spot and cavity	162	64.8%
10	How do you identify tooth	Bleeding	41	16.4%
13	decay?	Pain	39	15.6%
	·	Don't know	8	3.2%
		Sticky foods	19	7.6%
	Which is the ideal diet, to	Fibrous foods	140	56%
14	maintain healthy teeth?	Liquid foods	43	17.2%
	•	All of the above	48	20.2%
		Once in a year	47	18.8%
15	How often should a person	Once in 2 years	37	14.8%
	visit a Dentist?	Once in 6 months When	145 21	58% 8.4%
		there is a pain		
	What will you advice a	Don't know	7	2.8%
16	mother of a child, when she is breastfeeding or bottle	No need to advice anything	29	10.4%
16		Give some water after	74	29.6%
	feeding her child?	feeding		
		and before going to bed	140	57.2%
		Clean the gum pads and		
		teeth with plain water		
17	If a person is suffering from a sudden tooth ache, what will you do?	Ask him to bear the pain	3	1.2%
		until it subsides		
		Advise him analgesic and	137	54.8%
		refer to a nearby dentist		
		Refer to nearby dentist	91	36.4%
		Refer to nearby general	19	7.6%
		physician		
	If a person is a tobacco	Burning sensation	9	3.4%
18	chewer, what kind of	Mouth Ulcer	26	10.4%
	problems can develop in oral	Gum disease	31	12.4%
	cavity?	Oral cancer	184	73.8%

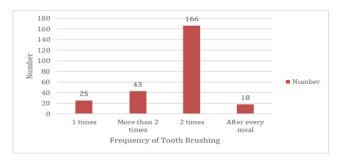


Figure 3: Frequency of tooth brushing

advise the mother to give water to the infant after feeding and before going to bed. 55% respondents had adequate

knowledge about the management of toothache as they said analgesics should be given and referred to a nearby dentist should be done. The majority of them were of the view that tobacco is a risk factor for developing oral cancer.

3.4. Knowledge about dentistry (Table 4, Figure 5)

There are 9 specialties in Dentistry. Periodontists do Gum Treatment and Teeth replacement is done by the Prosthodontist. Public Health Dentistry is a similar branch in Dentistry to Community Nursing. 38% respondents reported correctly about the number of branches in Dentistry. 36% answered that Periodontist do gum treatment. 39% reported that teeth replacement is done by Prosthodontist and 30% responded that Endodontist do

Table 4: Frequency distribution of participants regarding knowledge about dentistry

Question Number	Questions	Options	Frequency	Percentage
		7	31	12.4%
19	How many specialties are there in dentistry?	9	95	38%
		11	76	30.4%
		5	48	19.2%
	What does a periodontist do?	Filling of teeth	24	9.6%
20		Extraction of teeth	76	30.4%
20		Gum treatment	90	36%
		Replacement of teeth	60	24%
	What does a prosthodontist do?	Filling of teeth	31	12.4%
21		Extraction of teeth	49	19.6%
21		Gum treatment	73	29.2%
		Replacement of teeth	97	38.8%
	If a specialist provides root canal therapy for a patient, what is the specialty called?	Endodontist	75	30%
22		Orthodontist	58	23.2%
<i>LL</i>		Oral Surgery	66	26.4%
		Oral Pathology	51	20.4%
	Like community nursing, what is the specialty in dentistry called?	Pedodontia	16	6.4%
23		Oral Surgery	34	13.6%
43		Public Health Dentistry	164	65.6%
		Oral Pathology	36	14.4%

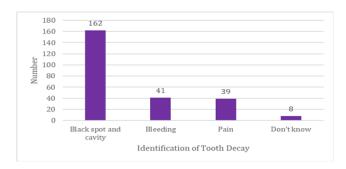


Figure 4: Identification oftooth decay

root canal treatment. Almost 66% had sufficient knowledge about Public Health Dentistry.

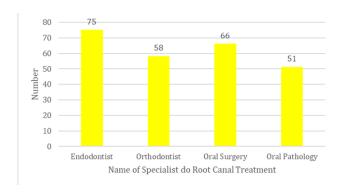


Figure 5: Name of dental surgeon perform root canal treatment

3.5. Other knowledge (Table 5, Figure 6)

70% were interested in doing work in Public Health Dentistry, because they thought that is the field which required their services. Finally, the majority of the respondents wanted to gain more knowledge of the oral cavity and oral diseases.

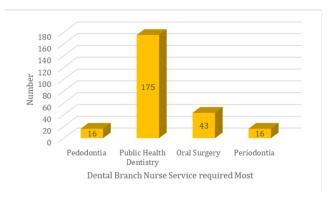


Figure 6: Dental branch nurse service required most

4. Discussion

Oral care is important for a patient's health and wellbeing for a variety of reasons. Not only is the mouth vital for eating, drinking, taste, breathing, verbal and nonverbal communication, but saliva also has antibacterial properties and is part of the body's defence against infection. Poor oral hygiene is well known to be associated with painful, unpleasant diseases such as gingivitis, dental caries, halitosis, xerostomia and more recently, has been

Question Number	Questions	Options	Frequency	Percentage
24	As a nursing graduate, where do you think your service is at most required in the field of dentistry?	Pedodontia	16	6.4%
		Public Health Dentistry	175	70%
		Oral Surgery	43	17.2%
		Periodontia	16	6.4%
25	As a nursing graduate do you think you should know more about oral cavity and oral diseases?	No	4	1.6%
		Yes	226	90.4%
		Not Necessary	18	7.2%
		No Comments	2	0.8%

Table 5: Frequency distribution of participants regarding other knowledge

linked to chest infections and pneumonia. ^{17–19} Regular oral care by a Professional can prevent aspiration pneumonia and reduce the onset of fever. ²⁰ Dental caries, Periodontitis and Oral cancer are major public health challenges in India. Providing oral health care that includes treatment and prevention of oral diseases should be an important part of our health care delivery system. ^{21,22}

About 80% of dentists work in major cities in India; whereas more than 70% of the Indians reside in rural areas. Very few oral health care services are provided in rural areas, however; oral healthcare seeking behaviour is also very low, especially among the rural population. ²³ A mismatch exists between distribution of Dental Surgeons and the population which they serve. Only 15- 20% of people in India are able to get dental services through national schemes. ²⁴ Access and quality of public health services have been below desirable standards. Although huge unmet treatment needs exist, there is a lack of accessibility of dental facilities in rural parts of India. Primary healthcare approach with respect to dental care is a major missing link in India. ^{25,26}

Oral health is not an issue concerning dental surgeons, social services and hospitals but also an issue of social justice. Community health nurses must be prepared to play a much wider role than is offered by her work in hospitals. Nurses are the first to interact with patients in a government or private hospital in India. If they have sufficient knowledge about oral health, they can give positive reinforcement to patients for improvement of oral health and also refer them to higher centers. ²⁷

Oral health is important during pregnancy. ²⁸ Many Evidence based Studies suggested that a strong association does exist between periodontal disease and pregnancy outcomes such as preterm and low birth weight. It is well established that poor maternal oral health can increase the risk of infants developing dental decay. Maintaining good oral hygiene during the prenatal period improves the oral health outcomes of the mother and the baby and may potentially improve pregnancy outcomes. Nurses get an excellent opportunity to offer preventive oral services by providing oral health assessments, education and referrals to pregnant women attending Hospitals. ^{29,30}

In the present study, the oral health knowledge and attitude of nurses was found to be insufficient. In this study 81% participants were aware of the number of permanent teeth, but only 60% of nursing personnel were aware that 20 teeth were present in the child's oral cavity. Similar results were reported by Senthil and Bhat in their study. ¹⁴ 58% participants answered that fluoridated toothpaste should be used. Higher response rate was reported by Senthil and Bhat and Ajithkrishnan et al in their study. ^{14,15} In the present study 57% participants said that soft toothbrush is ideal for brushing which is comparatively higher to 51% as reported by Senthil and Bhat in a similar study. ¹⁴ Almost 46% respondents stated that the tooth brush should be changed every 3 months and this result is in accordance with the study conducted by Senthil and Bhat in India. ¹⁴

66% participants were of the view that a person should brush twice daily, whereas Kaira et al., and Udoye & Aguwa reported the same as 49% and 43% respectively. ^{31,32} Naveen Kumar B. et al reported that only 27% participants brushed their teeth twice daily which is quite low as compared to our study results. ¹⁶

58% said that individual should visit the dentist once every 6 months. A considerably higher correct response rate was reported by Senthil and Bhat and Preston et al. ^{14,33} Kaira et al reported that almost 50% respondents visited the dentist only when they were suffering from dental pain. ³¹

56% of study participants knew about ideal diet for healthy dentition and regarding management of toothache which is quite high as compared to 49% and 36% reported in a study conducted in South India by Senthil and Bhat. ¹⁴The study revealed that nursing students and staff are interested in getting more knowledge related to oral health promotion and prevention of oral diseases; which is in accordance with the study conducted by Senthil and Bhat and Ajithkrishnan et al. ^{14,15}

Nurses had inadequate knowledge in identifying the duties of prosthodontist, endodontist and periodontist. But they were able to correlate with public health dentistry correctly and understood that their services are more required in the field of Public Health Dentistry as compared to other branches of Dentistry. This study emphasized these variables as baseline data for further studies.

Oral health is a crucial component of overall health and well-being, yet it is often overlooked in medical care. As healthcare providers, nurses play a crucial role in promoting oral health and preventing oral diseases. They are in a unique position to assess patients' oral health, provide oral health education and make appropriate referrals for dental care. However, the level of oral health knowledge among nurses can vary and it is essential to understand this variation and how it can impact patient care.

Education and training are essential for nurses to develop and maintain the knowledge and skills required to provide effective oral health care. The American Nurses Association (ANA) recognizes oral health an important aspect of overall health and recommends that oral health be included in nursing education and training programmes.

Education and training are essential for nurses to develop and maintain the knowledge and skills required to provide effective oral health care. The American Nurses Association (ANA) recognizes oral health as an important aspect of overall health and recommends that oral health be included in nursing education and training programs. Despite this recommendation, the level of oral health education provided to nursing students varied widely. While some nursing programs offer comprehensive oral health education, others may provide limited or no oral health education at all. This variability can result in disparities in the oral health knowledge and skills of nurses, which can negatively impact patient care.

The lack of oral health education in some nursing programs can lead to a lack of understanding of basic concepts of oral anatomy, oral hygiene practices and common oral health problems. Without this foundational knowledge, nurses may miss important oral health concerns during assessments, leading to missed opportunities for prevention and early intervention. For example, a nurse may not recognize the signs and symptoms of periodontal disease or understand how it can impact overall health. This lack of understanding can also result in incorrect advice or referrals for dental care.

In addition to a lack of oral health education, there are other barriers to the integration of oral health into nursing practice. One such barrier is the perception that oral health is the responsibility of dentists, not nurses. Another barrier is a lack of time and resources to provide oral health assessments and education during patient encounters. The fast-paced nature of many healthcare settings can make it challenging for nurses to take the time to thoroughly assess a patient's oral health and provide appropriate education and referrals

Despite these challenges, it is essential for nurses to have a basic understanding of oral health to provide effective patient care. Ongoing training and professional development opportunities can help to improve the oral health knowledge and skills of nurses. For example,

continuing education courses in oral health can help nurses to develop a deeper understanding of oral anatomy, oral hygiene practices and common oral health problems. Additionally, hands-on training opportunities, such as clinical rotations in dental clinics, can provide practical experience in oral health assessment and intervention.

5. Conclusion

The overall oral health knowledge and attitude of nursing students and staff was insufficient. Only half of the study participants were aware of various aspects of oral health. Being health professionals, nurses should have basic knowledge about oral health and diseases. Nurses should be familiar with the various risk factors to appropriately manage oral care and help make appropriate referral and intervention decisions. Having proper education and tools to assess risk can be used in conjunction with other risk assessments to help guide early detection, prevention and referral practices.

The level of oral health knowledge among nurses can vary and it is essential to understand this variation and its impact on patient care. A lack of oral health education in some nursing programs, combined with other barriers, can result in disparities in the oral health knowledge and skills of nurses. Ongoing training and professional development opportunities can help to improve the oral health knowledge and skills of nurses, leading to better patient outcomes. By incorporating oral health into nursing education and practice, nurses can play a critical role in promoting oral health and preventing oral diseases. Ongoing training and professional development opportunities are essential to ensure that nurses have the knowledge and skills necessary to provide comprehensive and effective oral health care. By improving oral health knowledge of nurses, patients can receive the highest quality of care, resulting in better oral and overall health.

The findings can also stimulate discussions between nurses and dentists about collaborative strategies to address the dental burden in India. This may lead to the development of new models of care that leverage the strengths of both professions to improve access to quality oral healthcare. The study found that nursing students and staff had an interest in doing services for common people in India and learning more about oral health. It is recommended that a dental curriculum should be introduced in the nurses undergraduate training program which can be housed in Public Health Dentistry department as a part of community nursing. This will increase their knowledge and interest in working for Indian People which will subsequently improve the awareness and knowledge of oral health in the community through the nurses.

6. Source of Funding

None.

7. Conflict of Interest

None.

References

- World Health Organization. Oral health; 2024. Available from: https://www.who.int/news-room/fact-sheets/detail/oral-health.
- Shoaee S, Ghasemi E, Sofi-Mahmudi A. Global, regional, and national burden and quality of care index (QCI) of oral disorders: a systematic analysis of the global burden of disease study 1990-2017. BMC Oral Health. 2024;24:116.
- Chi AC, Neville BW, Krayer JW. Oral manifestations of systemic disease. Am Fam Physician. 2010;82(11):1381–9.
- Kamala R, Sinha A, Srivastava A. Primary tuberculosis of oral cavity. *Indian J Dent Res.* 2011;22(6):835–43.
- 5. Stoica SA, Valentini G, Dolci M. Diabetes and non-surgical periodontal therapy: what can we hope for? *J Hyg.* 2022;2(2):85–93.
- Gulati S, Mishra A. Sugar intake, obesity, and diabetes in India. J Nutr. 2014:6(12):5955–74.
- Kim K, Han K, Yang S. Association between overweight, obesity and incidence of advanced dental caries in South Korean adults: a 10year nationwide population-based observational study. *PLoS ONE*. 2020;15(2):e0229572.
- 8. Lee YH, Wong DT. An emerging biofluid for early detection of diseases: saliva. *Am J Dent*. 2009;22(4):241–9.
- Correa MC, Lerco MM, Mde LC. Salivary parameters and teeth erosions in patients with gastroesophageal reflux disease. Arq Gastroenterol. 2012;49(3):214–22.
- FDI World Dental Federation. A report on oral health worldwide;
 2015. Available from: https://www.fdiworlddental.org/sites/default/files/2020-11/2015_wohd-whitepaper-oral_health_worldwide.pdf.
- 11. Khan AA, Jain SK, Shrivastav A. Prevalence of dental caries among the population of Gwalior (India) in relation to different associated factors. *Eur J Dent*. 2008;2(2):81–6.
- National Oral Health Policy of India. Ministry of Health and Family Welfare; 2021. Available from: https://main.mohfw.gov.in/sites/ default/files/N_56820_1613385504626.pdf.
- 13. Smith A, Singh R. A nurse's role-public health in dental practice. *Dent Nurs*. 2012;8(6):352–6.
- Senthil M, Bhat PK. Oral health knowledge and attitude among final year nursing undergraduate students in Bangalore City. *India JIAPHD*. 2011;17(1):389–96.
- Ajithkrishanan CG, Thanveer K, Chaudhary NJ. Oral health knowledge, attitude, and practices among nursing students of Sumandeep Vidyapeeth. *JIAPHD*. 2011;9(18):36–45.
- Kumar N, Ramesh N, Shankar R. Oral health knowledge, behaviour, and status among nursing students of Davanagere City. *Karnataka JIAPHD*. 2011;18(1):491–6.
- Malkin B. The importance of patients' oral health and nurse's role in assessing and maintaining it. *Nurs Times*. 2009;105(17):19–23.

- Ross A, Crumpler J. The impact of an evidence-based practice education program on the role of oral care in the prevention of ventilator-associated pneumonia. *Intensive Crit Care Nurs*. 2007;23(3):132–8.
- Son M, Lee JS. Association between oral health and incidence of pneumonia: a population-based cohort study from Korea. *Nat J.* 2020;10:9576.
- Ueda K. Preventing aspiration pneumonia by oral health care. *JMAJ*. 2011;54(1):39–43.
- Ramya K, Prasad KVV, Niveditha H. Public oral primary preventive measures: an Indian perspective. J Int Oral Health. 2011;3(5):7–18.
- 22. Kah A, Pau H. Challenges in dental public health: an overview. *IeJSME*. 2012;6(1):106–12.
- Tandon S. Challenges to oral health workforce in India. J Dent Educ. 2004;68(7):28–33.
- Singh A, Purohit B. Targeting poor health: improving oral health for the poor and the underserved. *Int Aff Glob Strategy*. 2012;3:1–6.
- Kumar S, Kumar S, Saran A. Oral health care delivery system in India: an overview. *IJBAMS*. 2013;3(2):171–9.
- Gambir RS, Kaur A, Singh A. Dental public health in India: an insight. *J Fam Med Prim Care*. 2016;5(4):747–51.
- Wooten KT, Lee J, Jared H. Nurse practitioners' and certified nurse midwives' knowledge, opinions, and practice behaviors regarding periodontal disease and adverse pregnancy outcomes. *J Dent Hyg.* 2011;85(2):122–53.
- Oral Health Care during Pregnancy and Early Childhood: Practice Guidelines. Available from: http://www.health.ny.gov/publications/ 0824/pda/windows_mobile/0824_child_health_professionals.pdf.
- Cibulka NJ, Forney S, Goodwin K. Improving oral health in lowincome pregnant women with a nurse practitioner-directed oral health care program. J Am Acad Nurse Pract. 2011;23(5):249–57.
- George A, Johnson M, Blinkhorn A. Promoting oral health during pregnancy: current evidence and implications for Australian midwives. J Clin Nurs. 2010;19(23-24):3324–33.
- Kaira L, Srivastava V, Chopra D. Oral health-related knowledge, attitude, and practices among nursing students of Rohilkhand Medical College and Hospital: a questionnaire study. *J Orofac Res*. 2006;2(1):20–3.
- Udoye C, Aguwa E. Oral health-related knowledge and behavior among nursing students in Nigerian tertiary hospital. *Internet J Dent Sci.* 2008;12(1):13–7.
- Preston AJ, Punekar S, Gosney MA. Oral care of elderly patients: nurses' knowledge and views. *Postgrad Med J.* 2000;76(2):89–91.

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