



## RESEARCH ARTICLE

### ORAL HEALTH KNOWLEDGE, ATTITUDE, PRACTICE AND AWARENESS AMONG NURSING STUDENTS IN MADURAI CITY

<sup>1</sup>Dr. Umesh.K, <sup>2</sup>Dr. Palanivel Pandian, R, <sup>3</sup>Dr. Ravisankar.B, <sup>4</sup>Dr. Subashree.T, <sup>5</sup>Dr. Manoj Kumar.G and <sup>6</sup>Dr. Fathima Parvin.S

<sup>1</sup>Head of the Department, Department of Public Health Dentistry, Best Dental Sciences College and Hospital Madurai

<sup>2</sup>Reader Department of Public Health Dentistry, Best Dental Sciences College and Hospital Madurai

<sup>3</sup>Post Graduate Student Department of Public Health dentistry, Best Dental Sciences College and Hospital Madurai

<sup>4</sup> Graduate Student Best Dental Sciences College and Hospital Madurai

<sup>5</sup> Post Graduate Student Department of Periodontics, Best Dental Sciences College and Hospital, Madurai

<sup>6</sup> Graduate Student Best Dental Sciences College and Hospital Madurai

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#### ABSTRACT

**Introduction:** Oral health is a key indicator of overall health, wellbeing and quality of life. It is important for nurses to have adequate knowledge about oral health to be able to provide necessary care and to at least detect few abnormalities in the mouth in order to achieve an optimal health status. The aim of this study was to examine oral health knowledge regarding oral diseases and oral hygiene among nursing students at Madurai City. **Materials and Methods:** It is a cross sectional questionnaire study conducted among 370 nursing college students in Madurai city. The study samples were divided into categories according to the year of study and a questionnaire was given to them to check for the Oral health Knowledge, Attitude and Practice among them. It was a single visit survey in which the questionnaire was collected from them and the data were segregated for statistical analysis. **Results:** The results from the study shows that the knowledge practice and attitude towards oral health for nursing students is comparatively less. Only 72.6% students had knowledge on importance of oral health 52.9% students had the attitude of maintaining the oral health and only 48.2% of them practice a negligible oral hygiene practice. **Conclusion:** The study concludes that although most of the students had satisfactory basic knowledge about oral health, attitude among the nursing students which was considerably lower than what would be expected. Nursing students are in need to raise their awareness about the importance of oral health to be competent in giving oral health care advices to the public as a part of the primary healthcare team.

#### INTRODUCTION

Oral health is a key indicator of overall health, wellbeing and quality of life. WHO defines oral health as "a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial well-being." A healthy mouth is an important tool for an individual to achieve a valuable quality of life, to be able to eat, speak and to feel general satisfaction. Oral health should be taken to account as much as any other health condition as it is a part of general health. According to Petersen, health is defined to remain in a physical, mental and

social well-being and absence of any type of illness, which also includes oral diseases such as dental caries and periodontitis. The knowledge is usually derived from information. Information when believed becomes an action and the outcome of the action is behavior. However, only a weak relation exists between knowledge and behavior. There are reports that there is an association between increased knowledge and better oral health.<sup>(1)</sup> Nursing personnel play a vital role in health promotion and preventive information dissemination, among their families, their patients, and community at large.<sup>(2)</sup> The microorganisms that colonize the human oral cavity and the infectious diseases associated with them have been shown to have effects on systemic diseases, such as aspiration pneumonia, circulatory diseases and diabetes mellitus. Maintaining the physical health of those who need care because of illness, old age, or dementia is extremely difficult, and specialized oral healthcare from a qualified professional is indispensable.

\*Corresponding author: Dr. Umesh, K.,

Head of the department, Department of Public Health Dentistry, Best Dental Sciences College and Hospital Madurai.

Many of those who need nursing care are afflicted with a number of disorders and are already undergoing treatment with many types of drugs<sup>3</sup>. Maintenance of a healthy state in these patients is difficult. In primary care, apart from physicians, it is the nurses who meet children and their families regularly. Thus, they can play an important role in the oral health education of individuals and groups and act as role models for patients, friends, families, and the community at large, provided they have proper knowledge on oral health. Research has shown that registered nurses lack knowledge within oral health and most registered nurses who lack knowledge of oral health finds it difficult to implement oral health care among elderly and hospitalized patients. It is important for nursing students to receive oral health knowledge in their program in order to manage it in their working life. There are only a few studies within this area, which are from a limited part of the world.

At present, the role of nurses in dentistry is negligible as they have less training and knowledge regarding oral health despite the fact that they play a vital role in health promotion and preventive information dissemination.<sup>(4)</sup> It is therefore, very important that nurses should be equipped with proper oral health knowledge which will subsequently require to be sustained. The mouth is a part of the human body and should therefore be considered important within health care. The first sign of disease in the body can be detected through the mouth and vice versa. Since many nurses and dental professions have mutual patients, it is of optimal need to understand the connection between oral health and general health and work as a team. It is important for nurses to have adequate knowledge about oral health to be able to provide necessary care and to at least detect 7 abnormalities in the mouth in order to achieve an optimal health status. Nurses will then be able to take upon the responsibility of oral health among elderly and hospitalized patients. The aim of this study was to examine oral health knowledge regarding oral diseases and oral hygiene among nursing students at Madurai city.

## MATERIALS AND METHODS

This study is a quantitative cross-sectional design based on a questionnaire. The study was approved by the Institutional Review Board of Best Dental Sciences College, Madurai. The population for this study were nursing students Madurai city At Madurai there were 4900 nursing students divided into four years (year one 127 students, year two 74 students, year three 72 students and year four 64 students).

**Sample size estimation:** To calculate 95% confidence interval for proportion 'p' and marginal error 'L' use a sample of size.

$$n = 4pq / L^2$$

'p' represents the Prevalance percentage.

'L' represents the Acceptable Margin.

'q' represents (1-p)

$$p=0.5, L=0.5, q=1-p$$

The total estimated sample size is 370 samples.

**Sample Selection:** The selection for this study was made of a stratified sample of the nursing program. There were 600 nursing students from the four zones in Madurai. The students

were stratified accordingly from colleges at each zones from Madurai city. The inclusion criterion for the selection was that they had to be nursing students, from Madurai city colleges.

## INCLUSION CRITERIA

- ) Nursing students studying in Madurai city.
- ) Nursing students willing to participate in the study.

## EXCLUSION CRITERIA

-Nursing students who are not willing to participate.

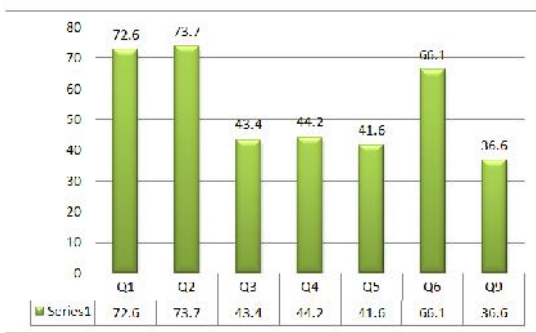
## Data collection

**Questionnaire:** The questionnaire (appendix 1) design was based on two earlier modified studies that have been used in bachelor reports (Ledin & Norlin, 2015; Gren & Juklen, 2010). The questionnaire is divided into three parts; the first part consists of knowledge based questions the second part consists of oral health practices questions and third part with the attitude towards the importance of oral health. All the questions in the questionnaire were in English. A native English-speaking teacher from American college Madurai examined the English language in the questionnaire and consent letter, to be sure that the language is correct and well written. A few changes were made to the questionnaire regarding the English grammar. The interview based questions was constructed in English and complicated English words were changed into simpler terms so that each participants can understand the questions easily and was able to answer. The internal consistency was assessed by Cronbach's . The results showed a good consistency with values higher than 0.8. Intra examiner reliability was determined using Cohen's kappa coefficient a value of 0.82 was attained. The agreement was expected to be Good

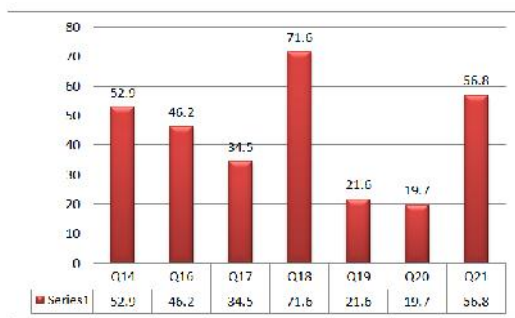
## RESULTS

The results from the study show that the knowledge practice and attitude towards oral health for nursing students is comparatively less. The knowledge on importance of oral health of the nursing students represented in (Graph 1) which shows that 72.6% of them are not aware that oral health was related to general health, 73.7% of them are only able to identify the number of teeth present in human system, 43.% of the students had knowledge on detecting the dental caries, 44.2% only know that status of healthy gums, 41.6% are aware that dental caries was related to dietary habits, 66.1% of them says that brushing tooth with brush and toothpaste is mandatory and 36.6% of the students are aware of the proper brushing time.

The Graph 2 represents the attitude of nursing students towards the oral health importance of which 52.9% had the attitude of maintaining the oral health care, 46.2% had the practice of noticing bleeding while brushing and only about 34.5% of them had the attitude of visiting a dentist. Of about 71.6% of the students had experienced bad odor in mouth and only 21.6% of the students had the attitude towards visiting a dentist for the same. 19.7% had only responded that nursing students must give importance to oral health needs and 56.8% had the confidence that they have sufficient knowledge on oral health.



Graph 1. Oral Health Knowledge among Nursing students in Madurai City



Graph 2. Oral Health Attitude among Nursing students in Madurai City



Graph 3. Oral Health Practice among Nursing students in Madurai City

Graph 3 represents the practice of maintain the oral health of nursing students was observed as 48.2% of them used medium toothbrushes and only 1.3% of them do the follow the proper brushing technique 58.8% of the students practiced brushing two times daily and 9.8% of them have the habit of changing the toothbrush at proper intervals, 15.6% of them had the habit of cleaning tongue while brushing and 34% had practiced the flossing methods and 15.8% of the nursing students had visited a dentist at regular intervals.

**DISCUSSION**

The oral cavity is an integral part of the human system as it is related with the general health it is recommended whenever health education is given oral health information must also be included into it. In the modern world medical field have joint ventures from various professions like doctors, nurses, pharmacists and healthcare professionals to work in collaboration as to provide a good health outcome. This study assessed the knowledge, attitude and practice of the nursing college students towards the oral health in Madurai city. Oral

disease can be considered as a public health problem due to its high prevalence and significant social impact. Due to the educational level and the professional role of the nurses, it is expected that they are more knowledgeable about oral health and its diseases to be able to disseminate such knowledge in the community<sup>5</sup>.The present study revealed that the majority of the respondents were using toothbrush and toothpaste to clean their teeth. It reflects on the homogeneity of the study group with the current lifestyle. This finding is similar (96%) to a study conducted by Doshi et al, 2007 among medical and engineering students<sup>6</sup> and a study among school children by Al-Omiri et al, 2006. Also, almost half of the respondents of this study used to brush their teeth once daily in the morning, and only a very low percentage of them used to brush their teeth more than twice daily. Others may be unaware of implementation of their knowledge into practice<sup>5</sup>. Also, this may be due to the fact that the students could not afford toothpaste regularly.

Therefore, in an attempt to make the toothpaste last longer, they economized by brushing once daily. Regarding the attitude/behavior of the studied nursing students the present study illustrated that the majority of them reported that they brush their teeth carefully this doesn't imply that all students who agreed with this statement do in fact brush their teeth carefully. These findings are in agreement with the results of Dagli *et al* (2008) study<sup>7</sup>. Also, this result was similar to that reported by Kawamura *et al* (2000 &2002) among the dental hygiene students of USA and Japan. More than half of the studied students in the current study reported that they had never been professionally instructed on how to brush their teeth, and the majority of them don't visit the dentist until they have tooth ache<sup>8</sup>.This may be due to the lack of awareness of the importance of following up for oral health like any other part of the body or the probable reason for such behavior could be dental treatment anxiety and high cost of dental care. The findings of the current study illustrated that more than three-quarters of the studied students had satisfactory knowledge regarding oral health. This finding indicated that there is gap between knowledge and practice. Also, changing behavior and attitude will not occur through implanting knowledge, it needs education that is aimed to change attitude. It needs more than knowledge to change the attitude. McGrath *et al.*,(2007) reported that oral health knowledge contributes to good oral health, but unless attitudes and habits are developed and put into practice, little will be gained<sup>9</sup>. In fact, the behavior and attitudes of nurses towards oral health could affect their capacity to deliver oral health care and thus might affect the oral health of their clients. However, the findings of their study showed that oral health knowledge was a significant factor in forming a positive attitude towards oral health maintenance.

The present study revealed that more than half of nursing students had a negative attitude toward oral health; this may be due to the high cost of dental services which in the long run may result in the development of a negative attitude toward dentist and dental procedures among the people in lower classes. These results are in agreement with a study among midwifery students at Tehran University of Medical Sciences done by Yazdani *et al*<sup>10</sup>.There students seemed to have limited oral health knowledge and fairly negative attitudes. In the present study, the negative attitude displayed by the students is inconsistent with the study by Buxcey *et al.*, (2012), where almost all the pharmacists felt that it was one of their responsibilities to give oral advices to the general public<sup>11</sup>.

This result was also consistent with another study by Baseer et al., (2012), where healthcare professionals including pharmacists, doctors, nurses, technicians, and also medical students showed positive attitude toward dental care<sup>12</sup>. Oral health knowledge is a requisite criterion for health related behavior. The contradiction between the results may be due the cultural orientation and the nature of the students' studying. The study highlights the knowledge attitude and practice of oral health importance among the nursing students in a brief approach but was limited for a limited population and geography.

## Conclusion

The current study concludes that although most of the students had satisfactory basic knowledge about oral health and attitude among them it was considered low than what would be expected from the nurses. Negative oral health practice could also affect student's oral health status and their role in oral health education. Nursing students are in need to raise their awareness about the importance of oral health to be competent in giving oral health care advices to the public as a part of the primary healthcare team.

## CONFLICTS OF INTEREST AND FUNDING

All the authors exhibit that there are no conflicts of interest and funding source for the particular research.

## REFERENCES

- Adachi M, Ishihara K, Abe S, Okuda K, & Ishikawa T. 2002. Effect of professional oral health care on the elderly living in nursing homes. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology & Endodontics*, 94(2): 191-195
- Adair SM. 2001. Recommendations for using fluoride to prevent and control dental caries in the United States. *Mortality and Morbidity Weekly Report*; 50(14):1-42.
- Al-Omiri MK, Board J, Al-Wahadni AM, & Saeed KN. 2006. Oral health attitudes, knowledge and behavior among school children in North Jordan. *J Dent Education* ;70(2):179-87.
- Arun Kumar Prasad P, Shankar S, Sowmya J, & Priyaa CV. 2010. Oral health Knowledge Attitude Practice of School students of KSR Matriculation School, Thiruchengode. *JIADS VOL -1 Issue 1 Jan-March*.
- Baseer MA, Alenazy MS, Alasqah M, Algabbani M, & Mehkari A. 2012. Oral health knowledge, attitude and practices among health professionals in King Fahad Medical City, Riyadh. *Dent Res J (Isfahan)*;9:386-92
- Buxcey AJ, Morgaine KC, Meldrum AM, & Cullinan MP. 2012. An exploratory study of the acceptability of delivering oral health information in community pharmacies. *N Z Dent J.*, 108:19-24.
- Dagli RJ, Tadakamadla S, Dhanni C, Duraiswamy P, & Kulkarni S. 2008. Self reported dental health attitude and behavior of dental students in India. *Journal of Oral Science*; 50: 267-272.
- Do an B. 2013. Differences in oral health behavior and attitudes between dental and nursing students. *Journal of Marmara University Institute of Health Sciences*. 3(1): 34-40 AAMJ, VOL11, NO3, JULI, 2013-SUPPL2
- Doshi D, Baldava P, Anup N, & Sequiera PS. 2007. A comparative evaluation of self-reported oral hygiene practices among medical and engineering university

students with access to health promotive dental care. *J Contemp Dent Pract* ;8(1):68-75.

- Kawamura M, Spadafora A, Kim KJ, Komabayashi T. 2002. Comparison of United States and Korean dental hygiene students using the Hiroshima university dental behavioural inventory (HU DBI). *International dental journal*. Jun;52(3):156-62.
- Needleman I, McGrath C, Floyd P, Biddle A. 2004. Impact of oral health on the life quality of periodontal patients. *Journal of clinical periodontology*. Jun;31(6):454-7.
- Yazdani R, Mohebbi SZ, Janeshin A, Tartar Z. 2013. Oral health knowledge, attitude, and status and oral health index among midwifery students of Tehran University of Medical Sciences, Iran. *Journal of Oral Health and Oral Epidemiology*. Dec 10;2(2):89-96.

## APPENDIX-1

### APPENDIX-1

BEST DENTAL SCIENCE COLLEGE AND HOSPITAL  
ORAL HEALTH SURVEY ORAL HEALTH KNOWLEDGE,  
ATTITUDE, PRACTICE AND AWARENESS AMONG  
NURSING STUDENTS IN MADURAI CITY

### INFORMED CONSENT

You are being invited to take part in research study. Your participation is entirely voluntary and you are free to decline to participate at any point during this study. If you say no, that will not affect you negatively in any way whatsoever. I have understood this study and I am hereby giving my consent to participate in the research study being carried out by the investigator.

By signing below, I agree to take part in research study entitled "ORAL HEALTH KNOWLEDGE, ATTITUDE, PRACTICE AND AWARENESS AMONG NURSING STUDENTS IN MADURAI CITY"

Signature of Participant \_\_\_\_\_

S.no:

Date:

NAME:

PLACE OF STUDY:

AGE:

GENDER: YEAR OF STUDY:

ADDRESS: COURSE:

- According to is there any relation between oral health and general health?
  - Yes
  - No
- How many teeth are there in the oral cavity?
  - 26
  - 28
  - 32
  - 30
- How do you identify tooth decay initially?
  - Black spot and cavity
  - Food impaction
  - Pain
  - Do not know
- What is the color of the healthy gums?
  - Dark red
  - red
  - pink
  - do not know

- 5. Do you know dietary habit affects the teeth and gums?
  - a) Yes b) No c) Do not know
- 6. What are the ideal materials for brushing?
  - a) Tooth paste and brush
  - b) Tooth powder and brush
  - c) Tooth powder and finger
  - d) Neem stick
- 7. What kind of brush do you use?
  - a) Soft b) Medium c) hard d) Ultra soft
- 8. In which manner do you brush your teeth?
  - a) Horizontal
  - b) Circular
  - c) Vertical
  - d) Both b and c
- 9. What is the normal time of tooth brushing?
  - a) Less than one minute
  - b) 1 to 3 minutes
  - c) 3 to 5 minutes
  - d) More than 5 minutes
- 10. How many times do you brush your teeth every day?
  - a) One time
  - b) Two times
  - c) More than two times
  - d) After every meal
- 11. How often do you change your tooth brush?
  - a) 1 month
  - b) 3 months
  - c) 6 months
  - d) More than 6 months
- 12. Do you clean your tongue every day?
  - a) Yes b) No c) Do not know
- 13. Do you know about flossing?
  - a) Yes b) No c) Do not know
- 14. How can you keep your teeth healthy?
  - a) Regular dental appointments
  - b) Daily oral care
  - c) Adequate diet and nutrition
  - d) Drink water frequently
- 15. How often do you visit a dentist?
  - a) Once in a year
  - b) Once in 2 years
  - c) Once in 6 months
  - d) When there is pain
- 16. Have you ever observed bleeding gums while brushing?
  - a) Yes b) No

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