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Knowledge, Attitude and Practice of Oral Care for ICU Patients among Nurses in Chennai city - A Cross-Sectional study

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ABSTRACT

Oral care is an important component in intensive care unit (ICU) nurses for the patients health and welfare to provide safety. It will prevent hospital based infections. Nurses are accountable for the oral care of the patients. Good knowledge and practice of the nurses can improve the oral care of the patients. This study aims to assess the knowledge,attitude and practice of oral care for patients among the ICU nurses.

MATERIALS AND METHODS: 60 ICU nurses were assessed from private medical institutions in this cross sectional study. A pre-validated questionnaire containing ten questions was distributed among the ICU nurses. Statistical analysis was performed in SPSS software version -23. Descriptive and inferential statistics were performed.

RESULTS: The result showed that 36.67% had a diploma and 55% had a bachelor as their educational qualification. About 96.67% think that oral care is important for the prevention of infection. Majority of the nurses are aware about oral health. 60% have not attended any awareness of oral health, only 40% have attended oral health awareness programs. There was no significant difference in the knowledge and attitude towards health between male and female nurses ($p>0.05$).

CONCLUSION: ICU nurses have good knowledge and attitude towards oral health care. However, their practice of oral health care towards ICU patients needs to be improved to improve the oral health of the ICU patients. Oral health care practice to be inculcated in the course of nursing education.

KEYWORDS : nurses , oral health , patient, knowledge, green energy green synthesis

INTRODUCTION

The standard of life and dignity are affected by oral health (1). This is more common and severe in hospitalized patients (2) . There is a negative impact on nutritional life in case of a dysfunction (3). Mostly in case of the ICU patients they have specific needs that they require for the best professional care from the ICU nurses who treat them (3).In the saving of the lives of the ICU patients there is always a least priority of the oral health (4). There are no educational programs conducted to bring awareness of the oral care of the patients in the ICU (5). If less importance is given then it is difficult to fulfill the requirement of the ICU patients (3). While taking care of the critically ill patients this also includes the oral health it is the duty of the nurses to assure the plan, implement and evaluate the patients oral health(6). For this the nurses must have an execution on hygiene of the oral part.In the fundamentals of the nursing study oral care is also a part of it (7). It is also a challenging task for all the ICU nurses to perform oral care . Oral

hygiene can prevent hospital related infections and ensure patients' wellbeing (8). Varied chronic diseases may lead to poor oral health so it is necessary for oral care in hospitalized patients (9).

Previous studies showed that even if the policy is implemented on oral care, nurses do not follow which shows the poor practice and knowledge of the oral care in ICU patients(10) . Study was done on South African ICU nurses which was done on the importance and care of oral health for hospitalized patients which also showed the low priority of the oral care (11). Study on the knowledge,attitude and practice towards oral care and it showed the lack of knowledge of patients and the patients non cooperative character (7). Our team has extensive knowledge and research experience that has translated into high quality publications (12–31).

There is always a necessity to take proper oral care of the ICU patients which needs to be practiced by the ICU nurses and the hospital also needs to take the necessary steps to implement the importance of oral care health. The main purpose of the study is to assess knowledge, Attitude and Practice of oral care for the ICU patients among the ICU nurses.

MATERIALS AND METHODS

The cross sectional study was conducted among 60 nurses in the ICU from Medical College and Hospitals in Chennai . This study employed a non-probability convenience sampling technique. A pre-validated and reliable questionnaire containing ten questions pertaining to assess knowledge, attitude and practice of oral health care among patients of ICU was distributed to the nurses (Annexure). The internal consistency of the questionnaire using Cronbach's α was found to be 0.83 . The questionnaire contained the question items pertaining to their knowledge, attitude and practice of the oral care of ICU patients . The average time taken by the participants to fill the questionnaire was 8 minutes.

All ICU nurses from private hospitals participated in the study who were present at the time of investigation had been included in the study. Oral consent from the nurses had been obtained after explaining the need for the study. Prior approval to carry out the study was obtained from the Institutional Research Committee (IRB) of the authors University. Also, prior permission to carry out the study was obtained from the private hospitals.

Statistical analysis was performed in Statistical Package for theSocial Sciences (SPSS) software version 23.0 (IBM, Chicago, USA). Descriptive statistics and Pearson's chi-square test was performed to present the frequency distribution of the options of the question items.

RESULTS

The data collected from the ICU nurses shows that about 75% were female nurses and about 25% were male nurses (Figure 1). The mean value of the age is 26.2. About 36.67% had a diploma as their qualification with female 31.67% and male 5%, about 55 % have bachelor as their qualification in which about 36.67% are female and 18.33% are male, about 8.33% are with master qualification in which 6.67%

are female and 1.67% is male (Figure2). The monthly income was less than 50,000 in about 35% and more than 50,000 in about 65 % .Work experience of the nurses with 1-2 years are 10% in which 10 % of female and no male, about 18.33% had work experience of 2-3 years in which 16.67% are female and 1.67% male, about 71.76% had work experience with more than 5 years in which 48.33% are female and 23.33% are male (Figure 3). Most of the nurses had a rotation shift pattern about 70% in which 50% are female and 20% are male. Nurses with morning shifts of about 30% in which 25% are female and 5% male (Figure 4). The frequency of the mouth care per day where 31.67%of nurses brush once per day in which 28.33%are female and 3.33% are male, about 66.67% brush twice per day in which 45% are female and 21.67% are male, about 1.67% brush more than two times in which female are1.67% (Figure 5). Most of their frequency of brushing was between 1-5 minutes in 61.67% in which 40% are female and 21.67% are male, about 10% brush between 5-10 minute in which female were 8.33% and male 1.67% , about 28.33% brush less than one minute in which 26.67% female and 1.67% male (Figure 6). Majority of them used adult tooth brushes as their tool. Nurses with about 40% of them had attended an oral awareness program organised by the management in which 33.33% were female and 6.67% male . About 60% have not attended in which 41.67% are female and 18.33% male (Figure 7). About 76.67% had experienced unpleasant tasks in which 53.33% were female and 23.33% were male, About 23.33% had not experienced unpleasant tasks in which 21.67% were female and 1.67% male (Figure 8). About 96.67% think oral care in ICU is important for infection prevention in which 73.33% are female and 23.33% are male, About 3.33% nurses think it is not important in which 1.67% are male and as well as female. There was no significant difference in the knowledge and attitude towards oral health between male and female nurses ($p>0.05$).

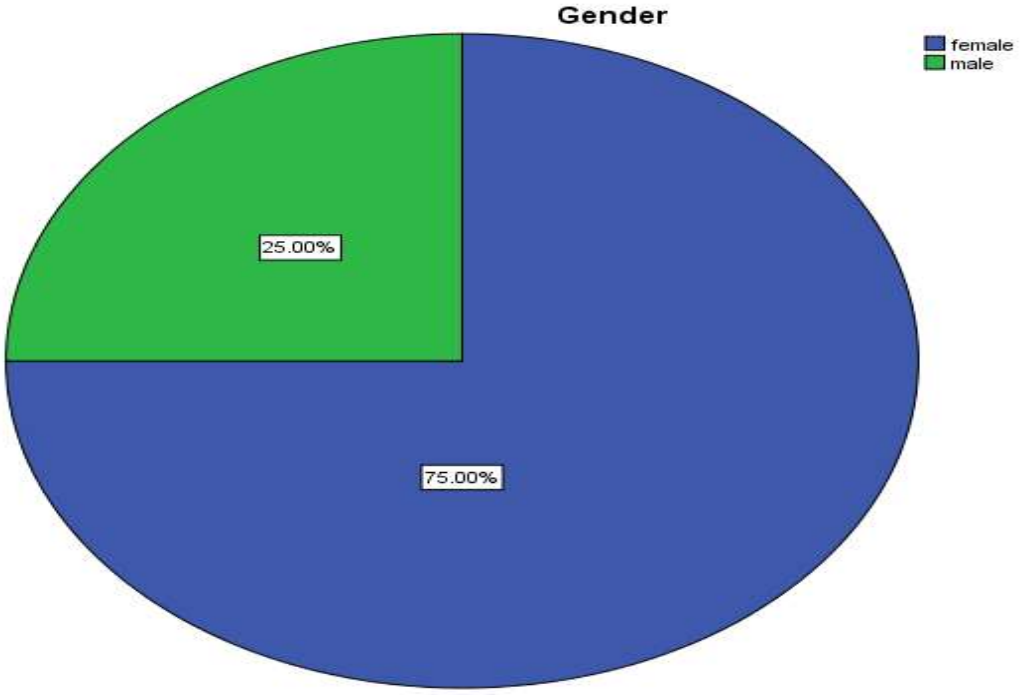

Figure 1 : Represents the percentage of participants of their gender. Blue colour denotes female participants and green colour denotes male participants .

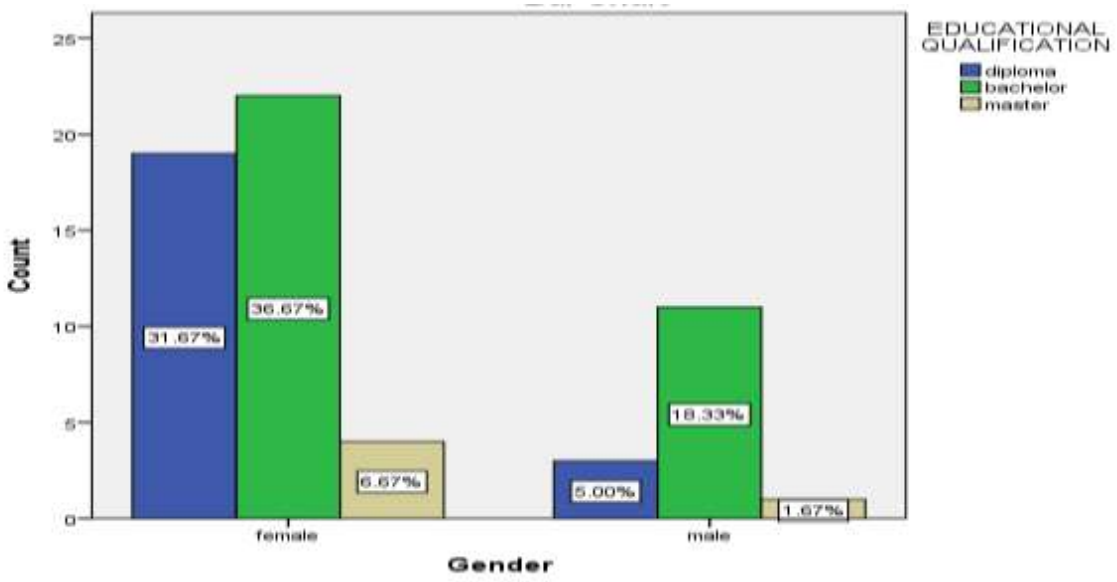

Figure2 : The bar graph depicts the association between the gender and their educational qualification. X axis represents the gender and Y axis represents the number of participants . Blue colour denotes diploma qualification, green colour denotes bachelor qualification and grey colour denotes master qualification. Majority of the male and female nurses pursued bachelor degrees as their educational qualification. This difference was not significant (chi square; p value = 0.24 - not significant)

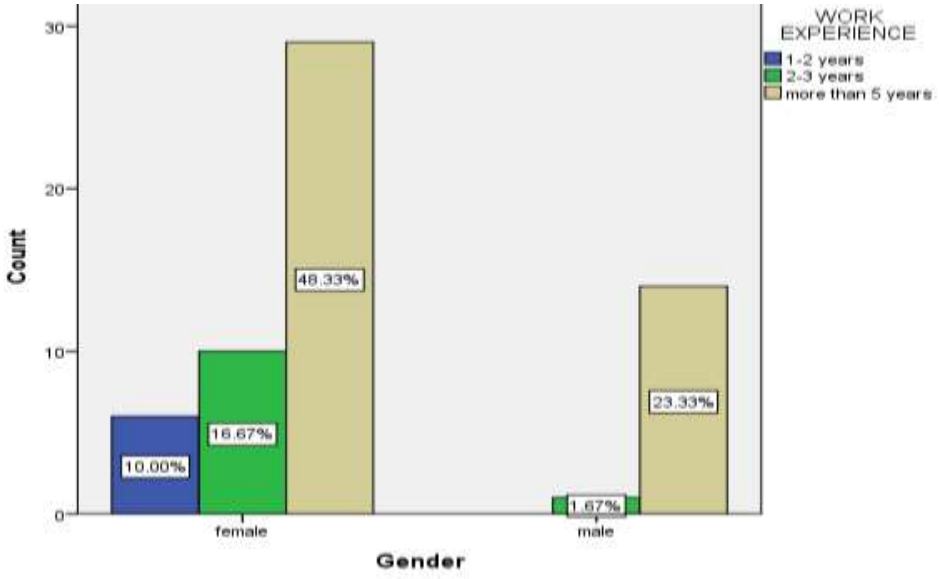

Figure 3 : The bar graph depicts the association between the gender and their work experiences. X axis represents the gender and Y axis represents the number of participants . Blue colour denotes 1-2 years of work experience, green colour denotes 2-3 years of work experience and grey colour denotes more than 5 years of work experience . Majority of the male and female nurses had work experience more than 5 years. This difference was not significant (chi square; p value = 0.09 - not significant)

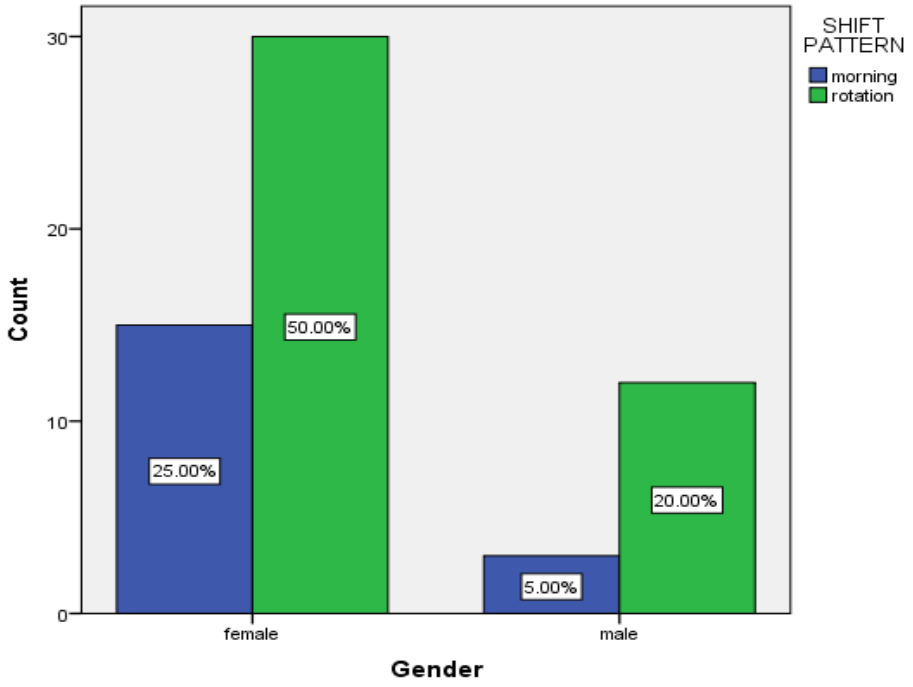

Figure 4 : The bar graph depicts the association between the gender and their shift patterns. X axis represents the gender and Y axis represents the number of participants . Blue colour denotes morning shift pattern, green colour denotes the evening shift pattern . Majority of the male and female nurses had a rotation shift pattern. This difference was not significant (chi square; p value = 0.32 - not significant)

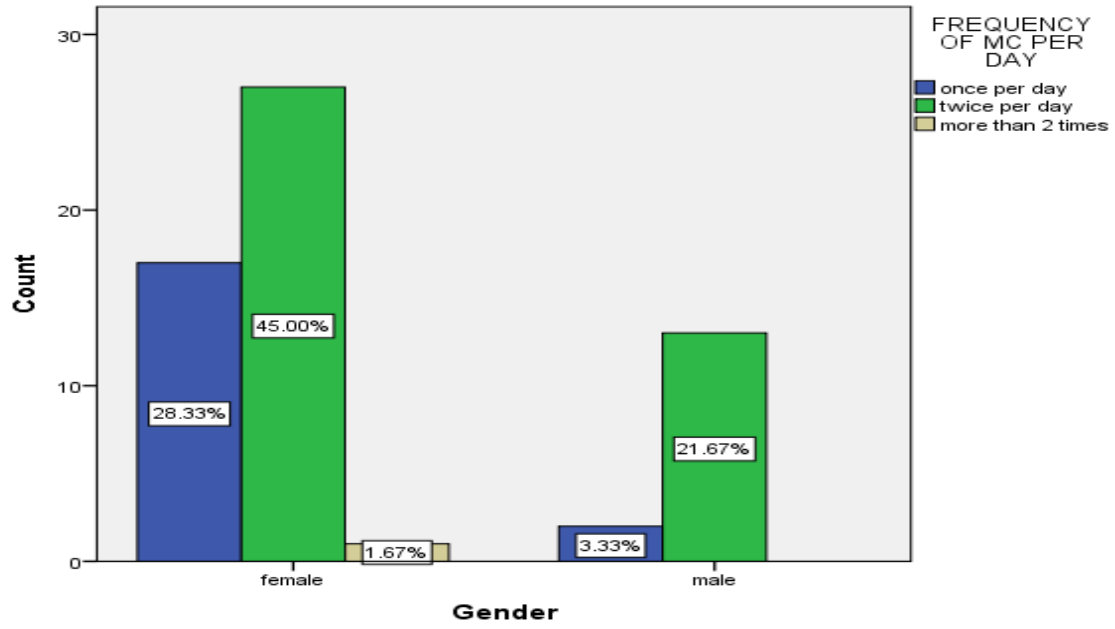

Figure 5 : The bar graph depicts the association between the gender and their frequency of mouth care . X axis represents the gender and Y axis represents the number of participants . Blue colour denotes

frequency of mouth care as once per day , green colour denotes frequency of mouth care as twice per day and grey colour denotes frequency of mouth care as more than two times . Majority of the male and female nurses had their frequency of mouth care as twice per day .This difference was not significant (chi square; p value = 0.16 - not significant)

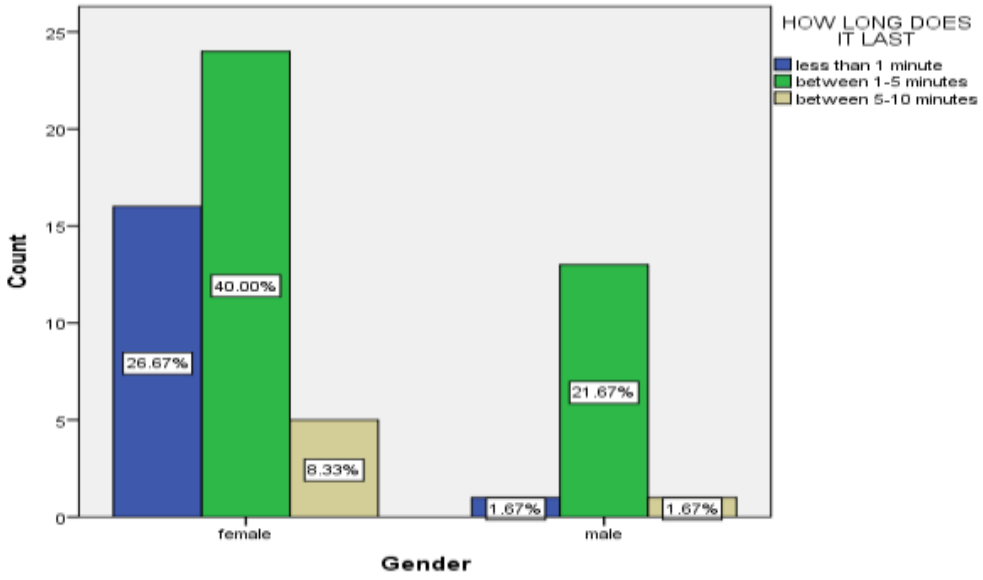

Figure 6 : Number of participants of their time of brushing. The bar graph depicts the association between the gender and their time of brushing . X axis represents the gender and Y axis represents the number of participants . Blue colour denotes brushing time as less than 1 minute , green colour denotes brushing time between 1-5 minutes and grey colour denotes brushing time between 5-10 minutes . Majority of the male and female nurses had brushing time between 1-5 minutes. This difference was not significant (chi square; p value = 0.06 - not significant)

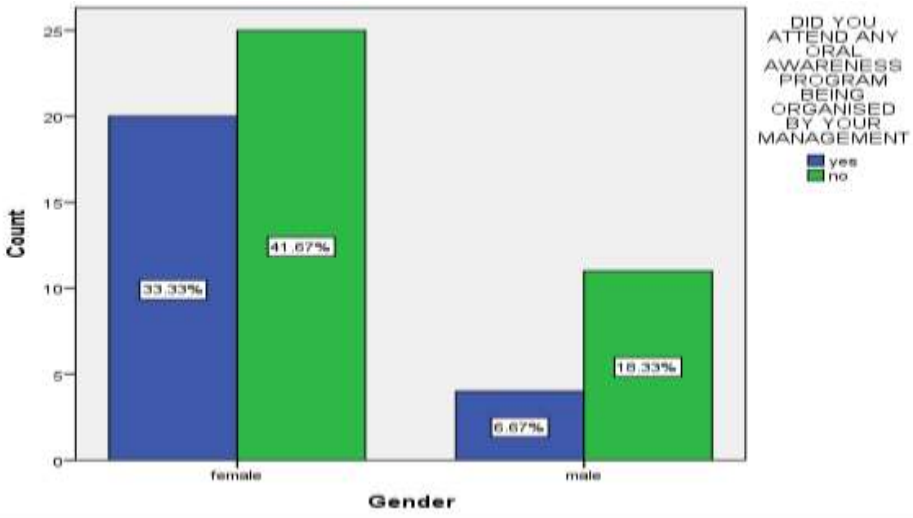

Figure 7 : The bar graph depicts the association between the gender and whether they had attended any oral awareness program . X axis represents the gender and Y axis represents the number of participants .

Blue colour denotes Yes , green colour denotes No . Majority of the male and female nurses had not attended any oral awareness program. This difference was not significant (chi square; p value = 0.22 - not significant)

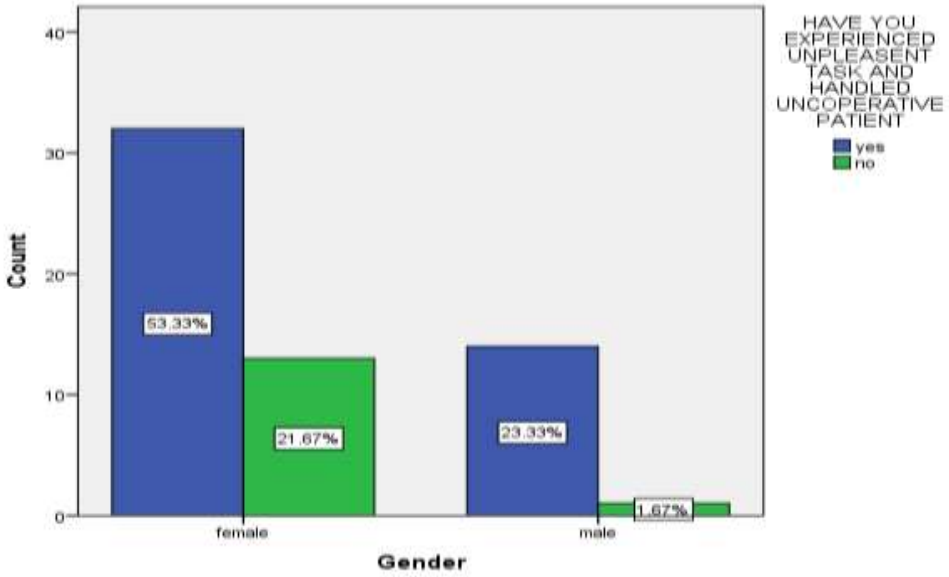

Figure 8 : The bar graph depicts the association between the gender and their unpleasant task and handling unpleasant patients . X axis represents the gender and Y axis represents the number of participants . Blue colour denotes Yes , green colour denotes No . Majority of the male and female nurses had unpleasant tasks and had handled uncooperative patients. This difference was not significant (chi square; p value = 0.07 - not significant)

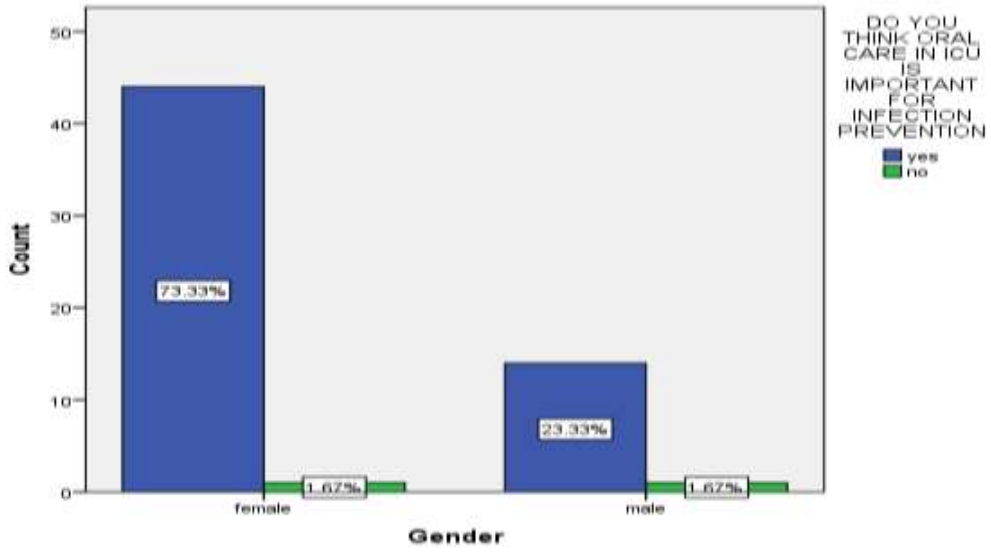

Figure 9 : The bar graph depicts the association between the gender and their opinion on the importance of oral care in ICU . X axis represents the gender and Y axis represents the number of participants . Blue colour denotes Yes , green colour denotes No . Majority of the male and female nurses think that oral care

is important for infection prevention . This difference was not significant (chi square; p value = 0.40 - not significant)

DISCUSSION

The present study aimed to examine the knowledge,Attitude and practice of oral care in ICU patients among the ICU nurses in Chennai city. The knowledge of the nurses of oral health was moderate and their attitude towards the oral care was satisfying whereas the practice needs to be improved on the oral health care.

From the study on the ICU nurses knowledge and attitude showed that about 97% majority of the nurses know the importance of oral care for infection prevention. Practice of the majority of the diplomas were poor and moderate was the practice of the bachelor holders (32) this study is consistent with the present study. Another study showed the majority of nurses had the knowledge of oral care factors and they showed a good positive attitude in consistency with the present study (33).

The average mouth care frequency of practice of twice per day was less when compared to that of five times practiced by nurses in the USA (34). The average percentage of ICU nurses' knowledge was 58.8% (35) when compared to the present study the knowledge is higher which is inconsistent with this study. From the previous study, it was found that a positive attitude towards the oral care for ICU patients existed among ICU nurses (62.3%) (36) which was inconsistent with the present study as it shows a positive attitude on oral care. The only limitation is that the study was carried out using a convenience sampling method with limited population. Further studies with large populations need to be carried out to extrapolate the results.

CONCLUSION

ICU nurses had moderate to good knowledge on the oral health care of ICU patients. But their attitude towards practice needs to be motivated and modified. This change in their practice will improve the oral health and in turn the general health of the ICU patients. Oral health care practice to be inculcated in the course of nursing education.

AUTHOR CONTRIBUTIONS

Author 1: Sheron Blessy , carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis and in the preparation of the manuscript.

Author 2: Arthi Balasubramaniam, aided in conception of the topic, designing the study and supervision of the study, correction and final approval of the manuscript.

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CONFLICTS OF INTEREST

None declared

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REFERENCES :

1. Furr LA, Allen Furr L, Binkley CJ, McCurren C, Carrico R. Factors affecting quality of oral care in intensive care units [Internet]. Vol. 48, Journal of Advanced Nursing. 2004. p. 454–62. Available from: http://dx.doi.org/10.1111/j.1365-2648.2004.03228.x

2. Munro CL, Grap MJ. Oral Health and Care in the Intensive Care Unit: State of the Science [Internet]. Vol. 13, American Journal of Critical Care. 2004. p. 25–34. Available from: http://dx.doi.org/10.4037/ajcc2004.13.1.25

3. Hildebrandt GH, Dominguez BL, Schork MA, Loesche WJ. Functional units, chewing, swallowing, and food avoidance among the elderly. J Prosthet Dent. 1997 Jun;77(6):588–95.

4. Scannapieco FA, Stewart EM, Mylotte JM. Colonization of dental plaque by respiratory pathogens in medical intensive care patients. Crit Care Med. 1992 Jun;20(6):740–5.

5. Longhurst RH. A cross-sectional study of the oral healthcare instruction given to nurses during their basic training. Br Dent J. 1998 May 9;184(9):453–7.

6. Treloar DM, Stechmiller JK. Use of a clinical assessment tool for orally intubated patients [Internet]. Vol. 4, American Journal of Critical Care. 1995. p. 355–60. Available from: http://dx.doi.org/10.4037/ajcc1995.4.5.355

7. Sole ML, Byers JF, Ludy JE, Zhang Y, Banta CM, Brummel K. A multisite survey of suctioning techniques and airway management practices. Am J Crit Care. 2003 May;12(3):220–30; quiz 231–2.

8. Terezakis E, Needleman I, Kumar N, Moles D, Agudo E. The impact of hospitalization on oral health: a systematic review [Internet]. Vol. 38, Journal of Clinical Periodontology. 2011. p. 628–36. Available from: http://dx.doi.org/10.1111/j.1600-051x.2011.01727.x

9. Salamone K, Yacoub E, Mahoney A-M, Edward K-L. Oral care of hospitalised older patients in the acute medical setting. Nurs Res Pract. 2013 May 30;2013:827670.

10. Feider LL, Mitchell P, Bridges E. Oral care practices for orally intubated critically ill adults. Am J Crit Care. 2010 Mar;19(2):175–83.

11. Paruk F, Richards G, Scribante J, Bhagwanjee S, Mer M, Perrie H. Antibiotic prescription practices and their relationship to outcome in South Africa: findings of the prevalence of infection in South African intensive care units (PISA) study. S Afr Med J. 2012 Jun 14;102(7):613–6.

12. Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial. Clin Oral Investig. 2020 Sep;24(9):3275–80.

13. Samuel SR. Can 5-year-olds sensibly self-report the impact of developmental enamel defects on their quality of life? Int J Paediatr Dent. 2021 Mar;31(2):285–6.

14. Samuel SR, Kuduruthullah S, Khair AMB, Al Shayeb M, Elkaseh A, Varma SR, et al. Impact of pain, psychological-distress, SARS-CoV2 fear on adults' OHRQOL during COVID-19 pandemic. Saudi J Biol Sci. 2021 Jan;28(1):492–4.

15. Samuel SR, Kuduruthullah S, Khair AMB, Shayeb MA, Elkaseh A, Varma SR. Dental pain, parental SARS-CoV-2 fear and distress on quality of life of 2 to 6 year-old children during COVID-19. Int J Paediatr Dent. 2021 May;31(3):436–41.

16. Samuel SR, Acharya S, Rao JC. School Interventions-based Prevention of Early-Childhood Caries among 3-5-year-old children from very low socioeconomic status: Two-year randomized trial. J Public Health Dent. 2020 Jan;80(1):51–60.

17. Vikneshan M, Saravanakumar R, Mangaiyarkarasi R, Rajeshkumar S, Samuel SR, Suganya M, et al. Algal biomass as a source for novel oral nano-antimicrobial agent. Saudi J Biol Sci. 2020 Dec;27(12):3753–8.

18. Chellapa LR, Shanmugam R, Indiran MA, Samuel SR. Biogenic nanoselenium synthesis, its antimicrobial, antioxidant activity and toxicity. Bioinspired, Biomimetic and Nanobiomaterials. 2020 Sep 1;9(3):184–9.

19. Samuel SR, Mathew MG, Suresh SG, Varma SR, Elsubeihi ES, Arshad F, et al. Pediatric dental emergency management and parental treatment preferences during COVID-19 pandemic as compared to 2019. Saudi J Biol Sci. 2021 Apr;28(4):2591–7.

20. Barma MD, Muthupandiyan I, Samuel SR, Amaechi BT. Inhibition of Streptococcus mutans, antioxidant property and cytotoxicity of novel nano-zinc oxide varnish. Arch Oral Biol. 2021 Jun;126:105132.

21. Muthukrishnan L. Nanotechnology for cleaner leather production: a review. Environ Chem Lett. 2021 Jun 1;19(3):2527–49.

22. Muthukrishnan L. Multidrug resistant tuberculosis - Diagnostic challenges and its conquering by nanotechnology approach - An overview. Chem Biol Interact. 2021 Mar 1;337(109397):109397.

23. Sekar D, Auxzilia PK. Letter to the Editor: H19 Promotes HCC Bone Metastasis by Reducing Osteoprotegerin Expression in a PPP1CA/p38MAPK-Dependent Manner and Sponging miR-200b-3p [Internet]. Hepatology. 2021. Available from: http://dx.doi.org/10.1002/hep.31719

24. Gowhari Shabgah A, Amir A, Gardanova ZR, Olegovna Zekiy A, Thangavelu L, Ebrahimi Nik M, et al. Interleukin-25: New perspective and state-of-the-art in cancer prognosis and treatment approaches. Cancer Med. 2021 Aug;10(15):5191–202.

25. Kamala K, Sivaperumal P, Paray BA, Al-Sadoon MK. Author response for "Identification of haloarchaea during fermentation of Sardinella longiceps for being the starter culture to accelerate fish sauce production" [Internet]. Wiley; 2021. Available from: https://publons.com/publon/47375106

26. Ezhilarasan D, Lakshmi T, Subha M, Deepak Nallasamy V, Raghunandhakumar S. The ambiguous role of sirtuins in head and neck squamous cell carcinoma. Oral Dis [Internet]. 2021 Feb 11; Available from: http://dx.doi.org/10.1111/odi.13798

27. Sridharan G, Ramani P, Patankar S, Vijayaraghavan R. Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma. J Oral Pathol Med. 2019 Apr;48(4):299–306.

28. R H, Ramani P, Ramanathan A, R JM, S G, Ramasubramanian A, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene. Oral Surg Oral Med Oral Pathol Oral Radiol. 2020 Sep;130(3):306–12.

29. J PC, Pradeep CJ, Marimuthu T, Krithika C, Devadoss P, Kumar SM. Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study [Internet]. Vol. 20, Clinical Implant Dentistry and Related Research. 2018. p. 531–4. Available from: http://dx.doi.org/10.1111/cid.12609

30. Wahab PUA, Madhulaxmi M, Senthilnathan P, Muthusekhar MR, Vohra Y, Abhinav RP. Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study. J Oral Maxillofac Surg. 2018 Jun;76(6):1160–4.

31. Mudigonda SK, Murugan S, Velavan K, Thulasiraman S, Krishna Kumar Raja VB. Non-suturing microvascular anastomosis in maxillofacial reconstruction- a comparative study. J Craniomaxillofac Surg. 2020 Jun;48(6):599–606.

32. Website [Internet]. [cited 2021 Mar 10]. Available from: Open Journal of Stomatology, 2015, 5, 179-186 Published Online July 2015 in SciRes. http://www.scirp.org/journal/ojst http://dx.doi.org/10.4236/ojst.2015.57023 How to cite this paper: Ibrahim, S.M., Mudawi, A.M. and Omer, O. (2015) Nurses' Knowledge, Attitude and Practice of Oral Care for Intensive Care Unit Patients. Open Journal of Stomatology, 5, 179-186. http://dx.doi.org/10.4236/ojst.2015.57023

33. Afzal M. Knowledge and Attitudes of Nurses towards Health Care Associated Infections in Lahore, Pakistan [Internet]. Vol. 2, TEXILA INTERNATIONAL JOURNAL OF NURSING. 2016. p. 1–8. Available from: http://dx.doi.org/10.21522/tijnr.2015.02.01.art003

34. Grap MJ, Munro CL, Ashtiani B, Bryant S. Oral Care Interventions in Critical Care: Frequency and

Documentation [Internet]. Vol. 12, American Journal of Critical Care. 2003. p. 113–8. Available from: http://dx.doi.org/10.4037/ajcc2003.12.2.113

35. Lin Y-S, Chang J-C, Chang T-H, Lou M-F. Critical care nurses' knowledge, attitudes and practices of oral care for patients with oral endotracheal intubation: a questionnaire survey [Internet]. Vol. 20, Journal of Clinical Nursing. 2011. p. 3204–14. Available from: http://dx.doi.org/10.1111/j.1365-2702.2011.03819.x

36. Binkley C, Furr LA, Carrico R, McCurren C. Survey of oral care practices in US intensive care units. Am J Infect Control. 2004 May;32(3):161–9.

ANNEXURE

1.Name

2.Age

3.Gender

4.Monthly salary

•less than 50,000 •More than 50,000

5.Work experience

1-2 years

3-4 years

More than 5 years

6.Education qualifications

Diploma

Bachelor

Master

7.Shift pattern

Morning

Rotation

8. Are you aware of oral health?

Yes or NO

9. Frequency of mouth care per day .

Once per day

Twice per day

More than 2 times

10. How long it lasts the brushing

Less than 1 minute

1-5 minutes

5-10 minutes

11. Tools

Adult toothbrush

Foam swab

12 .Did you attend any oral awareness program being organised by your management ?

Yes or No

13. Have you ever missed brushing because of emergency cases ?

Yes or No

14 . Have you experienced unpleasant task and handled un co operative patient

Yes or No

15 . Do you think oral care in icu is important for infection prevention ?

Yes or No