



## KNOWLEDGE AND ATTITUDE TOWARDS PERINATAL ORAL HEALTH CARE AMONG NURSING STUDENTS

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### Abstract:

**Aim and background:** Expectant women are more susceptible to oral health problems during pregnancy. Among various healthcare professionals, nurses are more likely to see pregnant women and their infants than dentists. It is imperative that nurses have a good basic knowledge on perinatal oral health and associated risk factors for dental caries and ECC, and are willing and able to advise pregnant women. Henceforth, this study aimed to examine the baseline knowledge and attitude of undergraduate nursing students during their formative years of healthcare professional education.

**Materials and methods:** A cross sectional study was conducted among 100 nursing students in Vivekanandha college of Nursing. Data was collected using predefined data capture form / schedule / questionnaire. Privacy and Confidentiality was maintained. The obtained data was transferred to the MS-EXCEL Sheet and descriptive statistics was carried out.

**Results:** More than two third (82%) were unaware that suppressing maternal oral microorganism reservoirs can decrease the infants risk of developing ECC. 57% agreed and 3% strongly agreed that they should update their knowledge on perinatal oral health and associated risk factors of dental caries and ECC.

**Conclusion:** Nursing students had limited knowledge about oral health of pregnant women and had some misunderstandings about oral health, although they had good attitudes.

**Keywords:** Attitude, knowledge, nursing students, pregnant women.

### **Introduction:**

The perinatal period is defined as the period around the time of birth, beginning with the completion of the 20-28<sup>th</sup> week of gestation and ending 1-4 weeks after birth.<sup>1</sup> Expectant women are more susceptible to oral health problems during pregnancy. Research continues to show an association between periodontal diseases and adverse pregnancy outcomes in humans such as preterm deliveries, low birth weight babies, and preeclampsia<sup>2</sup>

Increased incidence of dental caries is additional communal finding in pregnant women. Furthermore, vertical transmission of mutans streptococci has been well documented.<sup>3,4</sup> A current Indian study showed that, microbial count was higher in the mothers and children with ECC and S-ECC than caries free group.<sup>5</sup> Also, a recent review determined that, high maternal streptococcus mutans level were found to be associated with high child streptococcus mutans level.<sup>6</sup> Hence oral health care should be an important part of antenatal health care. Timely delivery of oral health education and preventive treatments to pregnant women can reduce the incidence of ECC.

Physicians, Nurses and other health care professionals are more likely to see pregnant women and their infants than dentists. The American Academy of Pediatric Dentistry recommends that the curriculum of all medical, nursing, and allied health professional programs include education in perinatal oral health, including the infectious etiology of ECC, methods of oral health risk assessment, anticipatory guidance, and the need for early establishment of a dental home.<sup>1</sup>

Although ECC is preventable, it has become a momentous oral health problem. In context to India, promotion of perinatal oral health at individual level is unaffordable. However, the integration of oral and overall health to prevent oral diseases can prove economical and counselling during the perinatal period from all health care providers (Eg: physicians, dentists, nurses) is essential to ensure good oral health for mother and infant.

In particular, nurses can play an important role in providing advice on preventive oral health care along with the physicians. Consequently, it is imperative that nurses have a good basic knowledge on perinatal oral health and associated risk factors of dental caries and ECC, and are willing and able to advise pregnant women. Henceforth, this study aimed at examining the baseline knowledge and attitude of undergraduate nursing students during their determinative years of healthcare professional education.

### **Materials and methods**

A cross sectional study was conducted among 100 nursing students in Vivekanandha college of Nursing, Tiruchengode, Namakkal district. The samples were selected using convenience sampling. Nursing students in their final year and internship and students willing to participate were included in the study. Nursing students who were not willing to participate were excluded from the study.

The study includes questionnaires in two domains, knowledge and attitude towards perinatal oral health care. Each domain consists of 11 closed ended questionnaires. To begin with, the pilot study was done among 20 nursing students and its reliability and validity was checked using Cron Bach's alpha (0.82). The questionnaires was distributed after obtaining informed consent from them.

Data was collected using predefined data capture form / schedule / questionnaire. Privacy and Confidentiality was maintained. The obtained data was transferred to the MS-EXCEL Sheet and descriptive statistics was carried out.

### **Results:**

The study was done in Vivekanandha college of nursing which is women college, hence no gender description in the results.

Table 1 showed the frequency and percentage of responses for knowledge based questions. 49% of nursing students had no idea about that maternal oral health affects overall health. More than two third (82%) were unaware that suppressing maternal oral microorganism reservoirs can decrease the infants risk of developing ECC.

Table 2 showed the frequency and percentage of responses for attitude based questions. 52% agreed that nurses in particular can contribute to promoting perinatal oral health to mothers and infants. 57% agreed and 3% strongly agreed that they should update their knowledge on perinatal oral health and associated risk factors of dental caries and ECC.

### **Discussion:**

Oral health care should be an important component of routine health care for pregnant women. Nurses are one of the main providers of antenatal health care services, and play important roles in increasing awareness of oral health and dissemination of information on oral health care to pregnant women. In our study 50 % had negative knowledge regarding hormonal changes in pregnancy increase risk for oral diseases. About 70% of the nurses in the study done by Sharif et al in 2015 knew that hormonal changes during pregnancy increase the risk for gum diseases, but less than half were aware of the possible link between maternal periodontitis and adverse pregnancy outcome.

Nausea and vomiting during pregnancy are often associated with food craving, particularly for fruits, fruit juices, and other sweet foods and drinks. Frequent consumption of simple carbohydrates may increase a pregnant woman's risk of dental caries. Nurses can advise women who experience cravings for sugary foods to opt for healthy non-cariogenic snacks instead, such as fresh fruits, vegetables, and dairy products, which are healthier for the woman and the developing foetus.<sup>8</sup> In our study, two third of the nurses (75%) had a good knowledge about the frequent consumption of cariogenic diet like sugarated beverages, sticky food substance etc increase mother's risk for caries.

Furthermore, 68% agreed that brushing of teeth with fluoridated toothpaste and flossing can prevent tooth decay. This is not astonishing because information about the association between dental caries and sugars and the defensive role of fluoride has been widely scattered to the public via advertisements for oral health care products and through the mass media. 71% of the nurses said the dental treatment cannot be safely performed during pregnancy. In fact, dentists can safely perform essential treatments during pregnancy to stop disease progression and prevent more serious problems.<sup>9</sup> It is authoritative that these delusions are corrected because nurses must be able to deliver accurate evidence based health messages to their patients.

Smadi L and Nassar OS in 2016 investigated knowledge of oral health and oral diseases and attitudes about oral health care education among students of nursing in Jordan, and their willingness to introduce such training into their curriculum. The study concluded that oral and dental health knowledge level was poor among nursing students and also that there is a need for oral and dental health structured training to be incorporated in the curriculum of nursing students at university level.<sup>10</sup> Kahrman I et al in 2017 evaluated the knowledge of pediatric nurses about the oral health care of newborns and children in Turkey and concluded that the knowledge of the nurses regarding the oral health status of newborns and pediatric oral health care was found relatively low. Also the study stated that the nurses' low educational status, years of professional experience, and inadequate previous education on oral health care may be considered as risk factors for their lack of knowledge.<sup>11</sup> Deogade SC and Suresan V in 2017 conducted a study to assess and evaluate the oral health knowledge and practices of final year nursing students in India. They concluded that Nursing undergraduates had adequate knowledge on the basic oral structure. However, they had poor knowledge about the brushing technique, the number of visits a person should make to a dentist. Many of them showed interest toward camps and clinical postings to enhance their knowledge towards oral health care.<sup>12</sup>

Yadav et al in 2019 assessed oral Health Knowledge, Attitude, and Practice among Nursing Students in the North-Eastern Part of Rajasthan and concluded that oral health-related behavior among the nursing students needs improvement. More educational and preventive programs should be organized to achieve better results.<sup>13</sup> Lakshmi et al in 2022 determined and compared the oral health knowledge, attitude, and practice (KAP) with oral health status among nursing students in Salem and concluded that need of incorporation of oral health course modules to increase the proficiency of nursing.<sup>14</sup>

Majority of the nurses in our study showed a positive attitude to incorporate oral health training as a part of curriculum education as similar in the above mentioned studies. Eventhough, we have limited sample size, the results of this study may motivate further studies within this field and may be helpful in planning oral health training, targeting nursing students or other health care professionals.

**Conclusion:**

The nurses in the present study had limited knowledge about oral health and oral health care of pregnant women. Certain misinterpretations about oral health were common, although most nurses had good attitudes regarding the importance of oral health care of pregnant women. The further training of nursing students pertaining to oral health education and upgrade of their academic curriculum related to oral health is recommended.

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**Table 1: KNOWLEDGE DOMAIN**

S.NO	KNOWLEDGE BASED QUESTIONS	RESPONSE	FREQUENCY (n) & PERCENT (%)
1	Does maternal oral health affect her overall health?	Yes	23
		No	28
		Don't know	49
2	Can oral diseases have implication on adverse pregnancy outcomes?	Yes	48
		No	13
		Don't know	39
3	Do hormonal changes in pregnancy increase risk for oral diseases?	Yes	11
		No	53
		Don't know	36
4	There is relation between gum diseases and adverse pregnancy outcomes such as preterm deliveries and low birth weight babies.	Yes	6
		No	72
		Don't know	22
5	Microorganisms causing dental decay get transmitted from mother to infant.	Yes	19
		No	46
		Don't know	35
6	Sugar consumption has a role in producing dental caries.	Yes	92
		No	0
		Don't know	8
7	Are you aware of Nursing bottle caries/Early childhood Caries (ECC) occurrence in children?	Yes	2
		No	43
		Don't know	55
8	Suppressing maternal oral microorganism reservoirs can decrease the infants risk of developing ECC	Yes	3
		No	15
		Don't know	82
9	Is oral health affected in a pregnant women experiencing frequent vomiting?	Yes	5
		No	79
		Don't know	16
10	Frequent consumption of cariogenic diet like sugarated beverages, sticky food substance etc increase mother's risk for caries	Yes	75
		No	3
		Don't know	22
11	Dental treatment can safely be performed during pregnancy	Yes	19
		No	71
		Don't know	10

**Table 2: ATTITUDE AND WILLINGNESS DOMAIN**

S.NO	ATTITUDE BASED QUESTIONS	RESPONSE	FREQUENCY (n) & PERCENT (%)
1	Physicians, Nurses and other health care professionals are more likely to see pregnant women and their infants than dentists	Strongly agree	92
		Agree	5
		Neither agree nor disagree	2
		Disagree	1
		Strongly disagree	0
2	Counselling during the perinatal period from all health care providers (Eg: physicians, dentists, nurses) is essential to ensure good oral health for mother and infant	Strongly agree	5
		Agree	23
		Neither agree nor disagree	53
		Disagree	10
		Strongly disagree	9
3	Nurses in particular can contribute to promoting perinatal oral health to mothers and infants	Strongly agree	16
		Agree	52
		Neither agree nor disagree	8
		Disagree	14
		Strongly disagree	10
		Strongly agree	7

4	Timely delivery of oral health education and preventive treatments to pregnant women can reduce the incidence of ECC	Agree	45
		Neither agree nor disagree	12
		Disagree	13
		Strongly disagree	23
5	Regular toothbrushing with fluoridated tooth paste and flossing by the mother can help reduce bacterial levels in oral cavity	Strongly agree	65
		Agree	3
		Neither agree nor disagree	17
		Disagree	10
6	Modification of mothers's diet,oral hygiene is necessary to provide health and nutrition to unborn child	Strongly disagree	5
		Strongly agree	18
		Agree	39
		Neither agree nor disagree	33
7	Sugar substitutes like xylitol and topical chlorhexidine can reduce dental caries in pregnant women	Disagree	4
		Strongly disagree	6
		Strongly agree	4
		Agree	29
8	Every pregnant women should be counselled on oral health and be referred to dentist for further care	Neither agree nor disagree	43
		Disagree	12
		Strongly disagree	12
		Strongly agree	19
9	It is necessary to incorporate oral health training as a part of curriculum education	Agree	22
		Neither agree nor disagree	48
		Disagree	6
		Strongly disagree	5
10	I should be able to identify pregnant women with oral health problems and counsel them on perinatal oral health care	Strongly agree	65
		Agree	13
		Neither agree nor disagree	12
		Disagree	8
11	I should update my knowledge on perinatal oral health and associated risk factors of dental caries and ECC	Strongly disagree	2
		Strongly agree	8
		Agree	14
		Neither agree nor disagree	34
		Disagree	19
		Strongly disagree	25
		Strongly agree	3
		Agree	57
		Neither agree nor disagree	13
		Disagree	18
		Strongly disagree	9