

Integration of Oral and Overall Healthcare by Enhancing Competencies among Health Professionals for Improved Primary Prevention - An Interprofessional & Collaborative Approach

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Abstract

Introduction: Integrating oral health into general health helps to make it more acceptable to the community, thereby addressing the problem of oral care inequality. But primary level health workers and medical doctors do not have adequate knowledge about oral hygiene and prevention of oral diseases. Health professions Education and practice in India like in other parts of the world, have always been and continues to be in silos. Increased collaboration among healthcare workers will play a major role in reducing the disease burden

Aim: Assess the knowledge, attitude and practices about oral health care and its systemic link, among diverse healthcare learners.

Methods: The project was initiated with a needs assessment survey among medical practitioners of a tertiary hospital. This was followed by an objective assessment of an interprofessional group of healthcare learners (medical, Nursing, Social work, and allied health). Teaching modules designed by AIIMS, CDER New Delhi for the National Oral Health promotion was used as educational tool.

Results: Medical practitioners had sound knowledge regarding oral health but had inadequate knowledge about oral-systemic link and 98% felt interprofessional education in healthcare is the need of the hour. Pre and post educational module assessment of the interprofessional learner groups showed that social work group had the least knowledge and medical students had the highest with a statistically Significance of p value of <0.001.

Conclusion: The needs-based survey elicited great enthusiasm for interprofessional collaboration from medical practitioners even terming it as the need of the hour for bridging the gap between oral and systemic health. Oral Health awareness was the least among the social work students compared to nursing students and Medical students. The extent of application of this knowledge in everyday patient care will have to be assessed in a case based Inter professional scenario

Keywords: Health professional; Oral-systemic health link; Interprofessional collaboration

Introduction

Oral health is integral to general health and can restrict activities in school, at work and at home, causing loss of productive hours. Moreover, there is diminished quality of life due to psychosocial

impact of these diseases. The strong correlation between most oral diseases and noncommunicable systemic diseases is due to the common risk factors. Many general disease conditions also have

oral manifestations. There are several barriers to oral healthcare like, a lack of acknowledgement of the importance of oral health, perception of oral health as independent and secondary to general health, no access to an oral health provider due to geographic distance, dental treatment is unaffordable, and quality of dental treatment is varied. Singh et al. [1] suggested integrating oral health into general health so that it becomes more acceptable to the community, thereby addressing oral care inequality in India. But grass-root level health workers and doctors do not have adequate knowledge about oral hygiene and prevention of orodental problems [2]. Kothia et al. [3] have summarized the need for National Oral Health Policy involving oral health promotion through prevention, narrowing the rural-urban gap, organizing a data recording system, quality dental education; and definite budget allocation for oral health as seen in developed countries. This was initiated in India through the National Oral Health Program to provide integrated, comprehensive oral healthcare in existing facilities with the main objective of integrating oral health promotion and preventive services with general healthcare system at various levels of the primary healthcare system. The Directorate General of Health Services and Ministry of Health & Family Welfare, Government of India launched this primary preventive oral health care program focused on primary prevention, which is most cost effective, appropriate and desirable [4].

It is, therefore, essential that to combat oral diseases, preventive approach including health education and promotion be given prime importance. The need of the hour is to develop an accessible, low-cost, sustainable primary preventive program using the existing health infrastructure and resources. Thus, for this purpose, oral health education of the health workers, school teachers and public is the main strategy and awareness generation is the major component of the oral health. But with the present scenario of healthcare professionals confined to their silos, Medical professionals continue to be taught and practice in a "medical" way, nurses in a "caring" way, and dentists and dental hygienists in a "dental" way, with an absolute lack of communication between these healthcare professionals [5]. The role that a healthcare professional can play in bridging the divide between oral and systemic health, depends on, his/her own knowledge about oral disease and its effect on general health, his attitude towards an interprofessional practice to improve patient health. The importance of sound oral health for better function, esthetics and psychological wellbeing, should be stressed by the medical and other healthcare professionals. This calls for an integrated educational environment for health care learners. Therefore, the aim of this study was to assess change in knowledge and attitudes towards primary prevention in oral & systemic health care using a collaborative and interprofessional approach among healthcare learners.

Materials and Methods

This was a cross-sectional study done over a period of 18 months from October 2018 to January 2020 as part of an Interprofessional project of FAIMER Fellowship. Permission was obtained from the

concerned authorities and Ethical clearance was also obtained from the institutional review board. List of medical faculty was obtained from the University website. The sample size was calculated based on total of 200 medical practitioners at our tertiary hospital at Mangalore. With confidence level of 95%, sample size was estimated to be around 90 participants. Considering 10% nonresponse rates 80 was taken as final sample size for the needs assessment. Prior to the start of the educational module, a needs assessment survey regarding the project was undertaken among the medical fraternity. This was done using a validated google form questionnaire distributed as email among 80 medical doctors from Mangalore with more than 2 years of post-specialty work experience. A pretested anonymous google form questionnaire was mailed to each participant and were individually asked to voluntarily complete and acknowledge the submission. Majority of the filled questionnaires were obtained back immediately. Those faculties who failed to respond, a 1-week time was given, and questionnaires were then mailed a second time. It was designed in English, was validated externally as well as internally, and modifications were then made accordingly before the final questionnaire was administered. A pilot study was conducted on 10 subjects selected randomly, to pretest the method and pilot study subjects were not included in the main study. For reliability of the questionnaire, a questionnaire was mailed twice to the respondents, 1-week apart and the co-efficient of reliability were calculated. Questionnaire had three parts. One consisted demographic information such as age, gender and years of experience in practice. Part two assessed their knowledge regarding preventive oral health care. Twenty statements regarding prevention of early childhood caries, periodontal diseases, oral cancer, malocclusion, and dental visit assessed the respondent's knowledge of prevention. Part three assessed attitudes of medical practitioners toward interprofessional collaborative primary preventive oral health care. After the needs assessment survey, an inter professional sample of 119 healthcare learners were decided upon which comprised of 36 medical students from KMC, Mangalore, 44 Nursing students from Indira Hospital, Mangalore, and 39 Social work students from Roshni Nilaya, Mangalore. Teaching modules and pre and post questionnaires were designed such that a health care learner will be able to understand the basic problem, correlate it with systemic health and refer to a dental setup. Modules used for oral health care awareness was designed on the National Oral Health Mission modules obtained from CDER, AIIMS, New Delhi with key areas of focus. The key areas of focus were Early childhood caries & Dental Caries, Gingival & Periodontal problems, Crowding, peri-oral procumbency & Jaw discrepancies, Eruption & Shedding schedule-basic description, Habits Assessment and Counselling, Identification of precancerous lesions, Demonstration of oral hygiene measures. Resource persons with relevant professional background was recruited from the dental institution with emphasis on the faculty specialty. An objective assessment of the inter professional team was done using an internally and externally validated questionnaire prior to the educational module. After the Teaching module session, the participants were subjected to the

same questionnaire for the post test. During this posttest session, the participants were reassessed for their knowledge level on oral health. Descriptive statistics included means and standard deviation of the respondent’s knowledge and attitude scores.

Results

The participants in the needs assessment phase presented with a mean age of 38.6 years. Of 59 participants, 60 % were males and 40 % females. Knowledge of preventive dental care in expectant mothers and neonates with relation to caries was the most accurate except for the timing of oral health check during pregnancy (Table 1, Figure 1). When comparing overall knowledge of preventive dental care, there was not much statistically significant differences found for knowledge related to prevention of caries, periodontal diseases, habits, and malocclusion (Table 2, Figure 2). Positive attitudes were expressed by almost all the respondents who felt interprofessional collaboration as essential (5.1%), need of the hour (6.8%), and valuable (12%) to the community. There was only a single negative attitude indicating that collaboration is not a good

idea (1.7%) (Table 3). The Awareness lectures with pre & posttest shows that among the medical Students the difference between the pre and post scores was around 3.306 which was statistically significant with a p value of 0.004. The Nursing students showed higher post score with a difference of 10.7 which was statistically significant with a p value of <0.001. The Social Service students on comparison had a higher post score with a difference of 17.718 which was statistically significant with a p value of <0.001 (Table 4). Comparison of the three groups showed that social work students’ group has the highest differential value of 17.72 and medical students has the least value of -3.31. This difference is statistically Significant with a p value of <0.001. Posthoc Tukey tests comparing Nursing and Medical students showed a mean difference of 14.0 which is statistically significant with a p value of <0.001. Comparing nursing and social work students’ groups showed a mean difference of -7.013* that is statistically significant with a p value of <0.001. Comparing medical and social work student groups showed a mean difference of -21.024* that is statistically significant with a p value of <0.001 (Table 5).

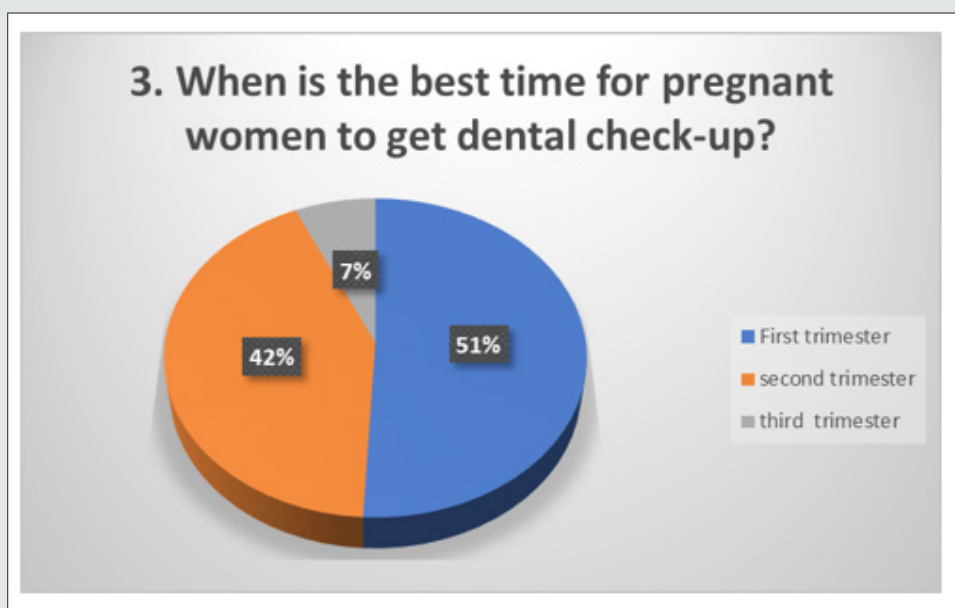


Figure 1:

Table 1

	NO%	Yes%	Don't Know%
1. Baby sucking the bottle with fruit juice /milk with sugar for a longer period of time ,is a sure way to get a tooth decay	13.60%	78.00%	8.50%
2. Milk teeth are important in helping to make sure that the permanent teeth come through in a correct position	16.90%	72.90%	10.20%
4. Using the same spoon to taste the food and feed the child and Sharing a toothbrush with your child. Is it appropriate?	95.60%	3.40%	
5. Expectant mothers with poor oral health have an increased risk of delivering low birth weight babies. Do you Agree?	13.60%	67.80%	18.60%

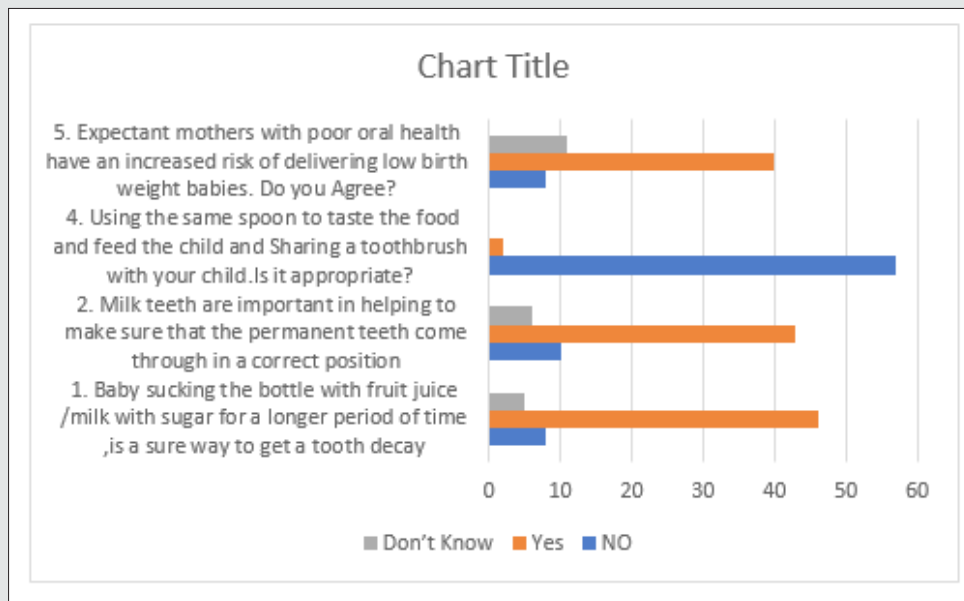


Figure 2:

Table 2

	NO%	Yes%	Maybe%
4. Are you aware that oral habits such as thumb sucking, mouth breathing, tongue thrusting etc. can harm the developing dentition?	6.8	91.5	1.7
5. Frequent occurrence of allergic rhinitis and tonsillitis can be associated with mouth breathing habit.	3.4	93.2	3.4
1.Do you feel mouth wash use is a must along with brushing and flossing to remove plaque.	27.1	45.8	27.1
2. Does diabetic individuals have more chances of developing gum disease	3.4	94.9	1.7
4. Do you feel a persistent complaint of dry mouth may be related to oral disease?	0	91.5	8.5
Do you think health care personnel other than Dental has a role in primary preventive oral care	6.8	91.5	1.7
knowledge on primary prevention in oral health care among non-dental health care personnel, will it be beneficial for better comprehensive patient care?	0	96.6	3.4
1. Would this information add value to your day-to-day clinical patient management?	8.5	83.1	8.5

Table 3

	Frequency	Valid Percent
	5	8.5
A Must	1	1.7
Absolutely vital	1	1.7
Absolutely necessary	2	3.4
Adds value to day-to-day dental care management	1	1.7
Challenging, needs time and resources. If successful, could help with early diagnosis, preventive interventions, education and thereby improving the oral health of the community.	1	1.7
Collaboration is Important, as in other specialties.	1	1.7
Collaboration will improve health care	1	1.7
Collaboration would deliver comprehensive health care	1	1.7
Definitely helpful in overall patient care	1	1.7
Definitely inter professional collaboration will help in the long run to increase the awareness about dental diseases among the public	1	1.7

Early care and professional timely interception are better for the patient	1	1.7
Early sensitization of mothers by obgyn's and midwives can help prevent babies with tooth caries. Hence it's vital that the there be a interprofessional collaboration	1	1.7
Essential	2	3.4
Every medical profession person should be aware of dental care..	1	1.7
Extremely important	1	1.7
Good	2	3.4
Good	4	6.8
Good idea	2	3.4
Good Relationship Within We And Keep The Patients Health In Better Way	1	1.7
Great initiative	1	1.7
Improve primary level of prevention	1	1.7
Inter professional collaboration in primary preventive oral care has the potential to reduce persistent barriers in accessing oral health care especially in vulnerable population and also can lead to more people accessing oral health care. This system would make oral health care delivery very coordinated and efficient.	1	1.7
It is the need of the hour. I am actually referring the children to a Pediatric Dentist regularly.	1	1.7
It is very essential for effective and comprehensive patient care	1	1.7
It is very useful and must be done	1	1.7
It should be a multi professional collaboration eg most people are unaware of relationship of heart disease and oral health	1	1.7
It should be done for comprehensive preventive care, but treatment should always be referred to a dentist.	1	1.7
It will be a good initiative	1	1.7
It will be beneficial for better patient Health Care	1	1.7
It will give better results	1	1.7
It will be of great benefit for patients	1	1.7
It would surely focus on the betterment of the patient. Working as a team makes treatment easier. As in cases were diabetic's r prone to gum disorders. Right guidance to the patients, mutual reference would surely help. Patient's medical history is very important in treatment of any disorder. A special reference also has to be made by doctors treating patients to inform the patient to reveal their ailments and medications they r taking when consulting an oral surgeon. A patient with thrombocytopenia or a patient who is on thrombolytics would end up bleeding after an extraction or any small oral surgery. It's always better for doctors to work as a team..	1	1.7
it's a good initiative.	1	1.7
It's important because it would help enhance knowledge and learn skills which would enhance patient care.	1	1.7
It's important	1	1.7
Just answering these questions, I realized how little I know about dental care. So interpersonal collaboration will definitely help	1	1.7
Need of the hour	4	6.8
Not really good	1	1.7
Referring our patients for dental check	1	1.7
Required	2	3.4
Should be incorporated into medical curriculum	1	1.7
Very useful	1	1.7
Yes, collaboration should be present.	1	1.7
Total	59	
		100

Table 4

Group		N	Mean	SD	Mean diff	T	DF	P value	
Nursing(Indira)	Pair1	Pre score	44	19.82	6.34	-10.7	-10.89	43	<0.001
		Post score	44	30.52	9.52				
Medical(KMC)	Pair1	Pre score	36	29.72	12.3	-3.3	-3.12	35	<0.004
		Post score	36	33.03	12.94				
Social work(Roshni)	Pair1	Pre score	39	28.49	7.3	-17.71	-14.63	38	<0.001
		Post score	39	46.21	1.05				

Table 5

Difference Between Pre & Post				
Groups	N	Mean	SD	F Value
Nursing	44	10.7	6.515	91.543
Medical	36	3.31	6.351	
Social work	39	17.72	7.56	
Total	119	8.76	10.871	
Difference Between Pre & Post				
Dependent Variable		Mean diff	Std Error	P value
(I)group	(J)group			
Nursing	Medical	14.010*	1.535	<0.001
	Social work	-7.013*	1.502	<0.001
Medical	Social work	-21.024*	1.578	<0.001

Discussion

This study was undertaken to emphasize the importance of Interprofessional collaboration in primary preventive oral health care. The study subjects were selected from a pool of medical students, nursing students and social work students because Anganavadi workers, ASHA workers and schoolteachers have been the personnel of interest in projects undertaken by the National oral health awareness project. Datta A and Datta [6] conducted a study on "Nutritional counselling in prevention of caries - a team approach" and they concluded that a collaborative effort is mandatory for the successful implementation of nutritional counseling in pediatric medical and dental settings as it is time to think and act together. Folayan MO et al. [7], concluded that there is a significant role of mothers in promoting adoption of caries risk preventive measures by children and maternal oral health behavior is the most significant factor that had effect on the oral health behavior of children aged. They also emphasized the important role of mothers in helping children develop good oral health practices. This led to the assumption that the best method to impart training to the mothers are through the medical and allied health personnel with whom they interact most. So, training for medical and allied health personnel were undertaken. The major strength of the project methodology was that this training was imparted to an interprofessional group of health workers which helps them to open up to more possibilities regarding patients' overall health

care rather than being restricted to their silos. The needs-based survey that was undertaken was to understand the response of the medical professionals towards interprofessional collaboration in primary preventive oral healthcare which can help in bridging the gap between oral health and systemic health. This elicited great enthusiasm from medical practitioners, some even terming it as the need of the hour. Oral Health awareness was the least among the social work students compared to nursing students and Medical students which can be attributed to the greater knowledge from the curriculum that is available for the medical and nursing students unlike the social service students. The extent of application of this knowledge in everyday patient care is questionable and will have to be assessed in a case based Inter professional scenario.

Medical professionals are the key personnel who can play a very important role in improving overall health of patients because of their knowledge as well as their clinical day to day experience [8,9]. They encounter a lot of oral health problems among patients during their practice such as tooth ache, swelling in oral cavity, bleeding gums, various white and red patches, which, on regular examination of the oral cavity can be identified at the initial stages and thereby leads to an early referral. Dental conditions like caries and gingival problems are quite insidious in nature, often with no pain or overt symptoms and, if left untreated, will continue to destroy both gum tissue and the underlying bone. This condition poses a threat to overall health too or can be a manifestation of a

systemic problem. Overall, the medical practitioners in this study showed positive attitudes towards interprofessional collaboration in oral and systemic health care, terming it as being essential, useful, and valuable. This is a positive indication that they too envisage a greater interprofessional interaction in oral systemic healthcare. As practice was not included in the study, prevention-oriented knowledge and attitudes found may not, however, translate to participant's everyday professional activity.

Conclusion

From the current study it can be concluded that the medical professionals possess a very good level of awareness regarding the impact of oral diseases on general health, but that is not translated to a routine oral checkup during medical examination. For better overall patient health, an interprofessional team-based care is the most promising answer. But to attain the objective of IPP in healthcare, one has to begin with interprofessional education. The findings of this study highlight the need for integrating systemic and oral healthcare utilizing a more collaborative and interprofessional mode of education of healthcare learners, so that patients will benefit from this transfer of knowledge and also will lead to increased referrals to the dental setup.

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