Original Article

Evaluation of Improvement in Knowledge and Attitude of Primary School Teacher's Towards Various Aspects of Paediatric Dentistry after Education Intervention

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Abstract

Background: Dental Health Education in teachers has prominently invested the knowledge about various aspects of paediatric dentistry. Oral health theories and implementations can be augmented and reinforced by teachers who can work allied with dental professionals thereby bringing noteworthy improvement in oral health status of children. Therefore it is analytical to ascertain knowledge and positive attitude towards various aspects of paediatric dentistry of primary school teachers who are a primary care giver and mentor to children. **Material and Methods:** The interventional study was outlined by two stage cluster sample. A total of four thirty seven primary school teachers took part in the research where the data was first collected by a close ended questionnaire. Re- evaluation was conducted after the education intervention and the results were statistically examined. **Results:** Pre tests revealed that only 52% primary school teachers had sufficient knowledge and positive attitude towards various aspects of paediatric dentistry. After the education intervention, post tests revealed 75.5% primary school teacher's good knowledge and positive attitude towards various aspects of paediatric dentistry which was appreciated. It was found statistically significance after post intervention with $p<0.05$. **Conclusion:** The study observes that the there is a notable innocence and knowledge gap concerning the knowledge about oral health and various aspects of paediatric dentistry that a primary school teacher holds and this has accentuated more the requirement of education intervention among primary school teachers to bring out better oral health status in children.

Keywords- *Attitude, Primary school teachers, Knowledge, Education intervention, Dental Health Education.*

Introduction

Dental Health Education in teachers has prominently invested the knowledge about various aspects of paediatric dentistry. [1] Oral health theories and implementations can be augmented and reinforced by teachers who can work allied with dental professionals thereby bringing noteworthy improvement in oral health status of children. [2] Therefore it is analytical to ascertain knowledge and positive attitude towards various aspects of paediatric dentistry of primary school teachers who are a primary care giver and mentor to children. [3]

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Teacher's awareness about dental trauma, fluoride application and elimination of dental decay, their point of view and blockade of execution of Dental Health Education programmes can be assessed through surveys. Inadequate training and productions and time within the syllabus were pinpointed as major roadblock to application of a Dental Health Education programme in primary school. Expanding teacher's training programme that inserts oral health knowledge and evidence based proposal to Dental Health Education within the academic world could authorize primary school teachers to play a remarkable role in oral health encouragement for children in Trinidad. [4]

Inspirational method using 'the smiling robot', through demonstration, exhibition and macro models have reduced the risk in dental decal and plaque accumulation. [5] A teacher should be instructed broadly concerning the consciousness of oral health advancement and significance of oral health for their students in amalgamation with health care assistants. [6]

Oral health standard results from degree of information available, attitude, routine and subsistence. [7] Origin of details about oral can be acquired through dental office (82%) accompanied by books and magazines (74%). When grading the ten methods of averting dental caries in children, teacher did methods such as fluoridated water and pit and fissure sealants lower than making methodical dental visits and lessening the ingestion of sugared foods. [8]

Despite of immense possible work force resources and growing economy, India stand behind in expression of education, quality of livelihood and peculiarly health even though there are different plan of action of National oral health programme that are used in up skilling the teachers, children and health care workers about oral health. [9]

There are numerous researches revealing about poor knowledge teachers have in dental education in western countries. [10] In numerous formerly school educational programmes have seemed to fail to bring any transition in children's behaviour quantifiable improvement in oral hygiene. [11]

Few studies have been carried out to demonstrate the impact and effectiveness of school based Dental Health Education programmes in India and to evaluate the efficacy and feasibility of using primary school teachers for imparting Dental Health Education to school children. Thus, we intend to access the improvement in knowledge and attitude of primary school teacher's towards various aspects of paediatric dentistry after education intervention.

Need of the Study

In today's scenario, ideas of prevention, maintenance and awareness of dental health education have become topmost rime concern as per suggestions attained. In this study, three education intervention in the form of power point presentation, play act and exhibition will be used to improve the overall knowledge and attitude of primary school teacher's towards various aspects of paediatric dentistry.

Aim:

To evaluate and compare the improvement in knowledge and attitude of primary school teacher's towards various aspects of paediatric dentistry after education intervention.

Objectives:

1. To evaluate the knowledge and attitude of primary school teacher's towards various aspects of paediatric dentistry before education intervention.

2. To evaluate the improvement in knowledge and attitude of primary school teacher's towards various aspects of paediatric dentistry after education intervention.

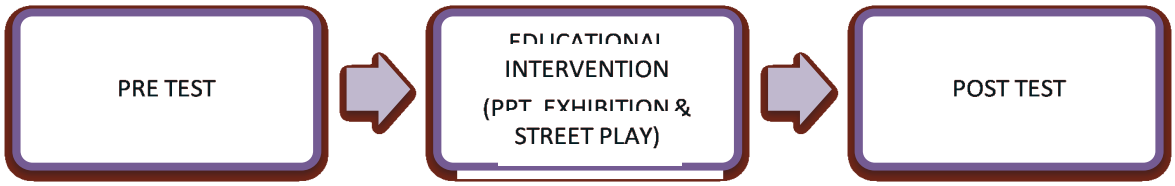
3. To compare the knowledge and attitude of primary school teacher's towards various aspects of paediatric dentistry with education intervention

Material and Methods:

This was an interventional study conducted among 437 primary school teachers in Karad city, Maharashtra, India. The range of subject were selected by two stage cluster sampling. Two out four sector were selected in first stage. All the schools were then drafted out from the selected sector. This was used as a sampling figure in which 20% of school in the sector was selected using random sampling tactic. The teachers who teach age groups of 8 to 14 years in the selected school agreed to participate in the study after written consent were inserted.

The collection of data was done by a single trained investigator to avoid inter examiner changes. Firstly, a close ended questionnaire and survey per forma was handed over to the primary school teachers to collect the knowledge on attitude towards deciduous teeth problems and its importance, necessity of pulpectomy, dental caries and diet correlation, dental and mental health correlation, awareness about paediatric dentistry, oral habits and jaw growth correlation, attitude towards child first dental visit, fluoride treatment and dental caries correlation, dental health and overall development correlation and need of awareness programme for paediatric dentistry.

The primary school teachers were then given education intervention through power point presentation, play act and exhibition concerning various aspects of paediatric dentistry. The data is collected again after the education intervention for post interventional analysis.



To compare the knowledge and attitude of primary school teachers towards various aspects of paediatric dentistry after education intervention,

Ethical Consideration- This is an interventional study conducted after due approval from ethical committee (protocol number)

Statistical Analysis: First the data was transformed into MS-Excel. Frequency and Percentage was done by using MS-Excel itself. Comparison of knowledge, attitude in pre and post test score was done by using Paired t-test. It was found significant when $p<0.05$. The SPSS (Statistical Packages for Social Sciences) 20.0 was used to do analysis for Paired t-test.

Result

The demographic characteristics of all 437 teachers who participated in the study are primary school teachers from Karad, For getting this 437 primary school teachers we found to be Out of the 21 schools in each group, 15 (71.4%) from the Marathi medium and 6 (28.6%) from the English medium responded. Out of 437 school teachers 298 (68.1%) were males, 139 (31.8%0 were females. The average age of school teachers were 43±6.7 years.

Table 1: Comparison of knowledge and attitude of primary school teachers towards various aspects of paediatric dentistry

Questionnaire Regarding Knowledge and Attitude with its Correlation		Correct Answers			
		pre test	percentage	post test	percentage
1.	Attitude towards Deciduous teeth problems?	277	63.39	344	78.72
2.	Importance of deciduous teeth?	299	68.42	313	71.62
3.	Time to change tooth brush?	247	56.52	327	74.83
4.	Necessity for Pulpectomy?	123	28.15	272	62.24
5.	Correlation of Diet and dental caries?	359	82.15	371	84.90
6.	Correlation of Extraction and jaw growth?	163	37.30	338	77.35
7.	Knowledge of Dental trauma management?	81	18.54	310	70.94
8.	Correlation of Oral habits and jaw growth?	226	51.72	356	81.46
9.	Awareness about Paediatric dentistry?	181	41.42	295	67.51
10.	Correlation of Dental and mental health?	212	48.51	306	70.02
11.	Attitude towards Child first dental visit?	180	41.19	338	77.35
12.	Correlation of Dental health & over all development?	311	71.17	363	83.07
13.	Correlation of Fluoride treatment and dental caries?	101	23.11	319	73.00
14.	Need of Awareness programme for paediatric dentistry?	293	89.93	377	86.27

Table 1 shows the knowledge and attitude of teachers prior to the educational intervention, and also compares it after the educational intervention as a post-test response. The understanding was consistently lacking in almost all questions prior to the invasion. The level of correct answer varied from 18.54 to 89.9.3%. In contrast, the attitude was seen to be more positive, and most teachers wanted to learn proper management skill for handling the dental paediatric intensity. Significant differences were found in knowledge and attitude score concerning

teachers work experience and gender ($p < 0.05$). After the health education, significant improvement was observed in knowledge about the correct management of dental injuries. The level of correct answers increased significantly which varied from 62 to 87%. Improvement in positive attitude was also seen in teachers after receiving the intervention.

Table 2: Comparison of knowledge and attitude Score of primary school teachers towards various aspects of paediatric dentistry.

Knowledge and Attitude Score	Pre- Test	Post-Test
Mean	225.21	330.64
SD	94.76	30.33
Paired t-test	22.15	
P-value	<0.0001*	

*Significant When $p<0.05$

Table 2 shows that comparison of knowledge and attitude Score by transforming responses of 437 of primary school teachers towards various aspects of paediatric dentistry it was found that mean score of before intervention was 225.21±94.76 and after intervention the mean score was 330.64±30.33. We had used the paired t-test for comparison and found statistically significant with $p<0.05$.

Discussion

In today's framework or storyline, schools are in necessity of having perfect acknowledgement about maintenance, application and importance of oral hygiene. Most of the oral hygiene practice do come from home but since a child spends most of the time in school, it has been a prime prerequisite for their teacher to have knowledge about paediatric dentistry and its various aspects. A teacher can strongly create an impact about oral hygiene practice, various treatment in emergency situation like dental trauma, diet and dental caries correlation to children in order to bring a good oral health standard in them. So, it is important to educate the teachers in today's academic setting about various aspects of paediatric dentistry to ensure a better outcome of the clinical treatment.

There are many researches and studies done to evaluate the knowledge and attitude of school teachers about dental education. However, numerous researches done in Zanzibar[12], Trabzon[13], Saudi Arabia [14-15] and Nigeria[16] has shown the lack of knowledge and poor attitude of teacher's towards dental education and its benefits. Various researches from different part of India in Davengiri[6], Mumbai[17] and Manglore[18] have also concluded similar results regarding school teacher's knowledge and attitude regarding the same. In the present study too we have observed the insufficiency of knowledge in primary school teachers about various aspects of paediatric dentistry, importance of oral health and its importance was indistinguishable to the national and international data.

In the first section of the questionnaire for the study was about attitude towards deciduous dentition problems dental trauma, dental caries and gingival infection. A study done in Pondicherry by Vidya Shekhar et al[19] has revealed that 47% of school teachers were aware the reason of dental caries due bacteria and high intake of sugar and 42% of school teachers were aware of the reason of plaque and

calculus accumulation causing gingival diseases. Similarly, studies conducted by Ehizele et al[15], Amjad H Wyne et al[13], Khalid Almar et al[14] has revealed that 60% , 97.4% d and 80% of male school teachers and 90% female school teachers knew that the reason for dental care was due to intake of sugar, poor oral hygiene and wrong brushing technique respectively. In the present study, only 63.39%primary school teachers knew about deciduous dentition problems prior to the education intervention which was observed that there is increase of 78.72% in post-test after the education intervention.

In the second section of the questionnaire for the study was about the importance of deciduous dentition. In the present study, 68.42% primary school teachers do have knowledge about the importance of deciduous dentition compared to the study done by Ankita Mota et al[17] where the results showed that 53.2% of primary school teachers knew about deciduous dentition. In the third section of the questionnaire for the study was about the dental trauma and its management which included the knowledge about management of avulsion and fractured tooth. In the present study, the results revealed that primary school teacher had prior knowledge about dental trauma management. These results were compared with studies by Neha Nashine et al[9] where 26.6% of school teachers had knowledge on management of fractured tooth and 3.2% on management of avulsed tooth. Management of avulsed tooth and their storage are not widely believed due to the common acceptance that they are not restorable.

Fourth section of the questionnaire was about the knowledge on dental visit of the child. In the present study, 41.19% were aware about the importance of regular dental visit for maintenance of oral hygiene during the pre-test and was increased to 77.35%. Studies by Vidya Sekhar et al[19], Amjad H Wyne et al[13] and Ezgi Baltari et al[12] has revealed 32%, 100% and 83% responses respectively about the need of regular dental visit of children. In the fifth section of questionnaire, general knowledge on fluorides were asked and it was shown in the present study that primary school teachers had 23.11% knowledge prior to the education intervention which was increased afterwards to 73%. Similarly, a Trabzon based study by Ezgi Baltari et al[12] obtained 65.8% knowledge on pre-school teachers on the same subject.

It was clearly seen in the present study a knowledge gap in all five sections of questionnaire which suggested the innate importance to recognize the education on oral health and various aspects of paediatric dentistry and the implementation of the same to the children to bring out more significant oral health status.

The last section of questionnaire for the study was featured on the need of awareness programme for paediatric dentistry where the present study shows that many primary school teachers had prior knowledge and positive attitude of various Dental Health Education programmes and their importance in the curriculum before education intervention. Present study emphasised 89.93% of primary school teachers are having knowledge and positive attitude about need of awareness programmes for paediatric dentistry. All teachers participated in the study with variable job experience had similar attitude towards the subject which gave no statistical difference compared to their job experience. The primary school teachers participated in the study also felt the need for informing the parent about the oral health of their children. A study done in Mumbai by Ankita Mota et al[17] has specified that 78.9% of primary school teachers were unaware about the school water fluoridation programme and 54.8% of primary school teachers had never discussed about the oral health of the children to their parents during the parent's meet. Whereas, a study done in Trabzon by Ezgi Baltari et al[12] has revealed that 35.1% of pre-school teachers has appositive attitude on taking up activities and programmes in educating the children. In another study of Jaya Naidu et al[20] have also exhibited about how different Dental Health Educational programmes has as impact on schoolchildren on a regular basis

To observe the effect of education intervention on primary school teachers, power point presentations, play act and exhibition was conducted which drastically improved the knowledge and attitude of primary school teachers towards various aspects of paediatric dentistry. There has not been an Indian study according to our knowledge which emphasis the- bring about of education intervention with pre and post-test scheme that had a significant effect of educating the primary school teachers. A similar study done in Dubai by Al Sari S et al[21] has shown that knowledge attained by physical education teachers and school nurses had increased after the education intervention and improvement was seen in pre-test (26%)and post-test(95%). In the present study, there is improvement in knowledge and attitude of primary school teachers in some questions 18.54% to 70.94% substantial increase was noted. The use education intervention by the mode of power point presentation, play act and exhibitions has been first study in India where there was significant difference shown in knowledge and positive attitude attained in post-test compared to pre-test. This study pointed more on the importance of educating primary school teachers about various aspect of paediatric dentistry so that it helps in inculcating more knowledge about the same and imparting the knowledge to children. However, power point presentation, play act and exhibitions was agreeable for the presenter in presenting the study and the importance oral health education to primary school teachers.

Conclusion

In today's academic setup, it is elementary need for the primary school teacher to be educated in oral hygiene, dental health programmes and awareness of the same. In the present study, it calls attention for the importance of dental education. There is a big necessity of more studies, education intervention and implementation of these in both urban and rural arts of India. Through the present study, it is understood that more dental health programmes should be enhanced in the current curriculum of teacher's in order to improvise healthy status and good oral practices in children.

However, parents and primary school teachers should be given more opportunities and privileges to attend more oral health education programmes and to work more associated with health care professionals. Having a positive overview about conservation, prevention of tooth related diseases by giving a healthier environment of understanding the importance of dental education, reinforcing the importance of dentition and topmost guidance given to children would bring a better oucome of oral health in society.

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Conflict of Interest: None.

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