International Journal of Community Medicine and Public Health
Nalli S et al. Int J Community Med Public Health. 2016 Aug;3(8):2270-2274
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20162582

Research Article

A study of oral health promotion activities in India

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Received: 19 June 2016
Accepted: 12 July 2016

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ABSTRACT

Background: Schools provide an important background for health promotion, as they reach around 200 million school children across India, and through them the school staff, their families, and the population as a whole. Health promotional messages can be reinforced throughout the most influential stages of children's life, enabling them to develop lifelong sustainable attitudes and skills. Objective of the study was to identify the best suitable method of oral health promotional activity, and to identify states where there is deficiency related to oral health promotion, and to create awareness to ensure long term benefits.
Methods: This current academic research reviews articles related to school based oral health programs from 2000 to 2014 which are published in English. Electronic search for literature related to school based oral health promotional activities across India using medline, pubmed, WHO, MOHFW. The articles selected were divided into five categories; divisions were based on those originating from North, South, East, West and Central India. Inclusion and Exclusion criteria - articles and reviews related to oral health promotion in children aged between 6 - 17 years were included and those adults are excluded. Fourteen articles were found to be relevant to school oral health promotion and hence were included in the present review. Data from all the fourteen articles was analyzed to determine the type of oral health promotional activity and the states in which they were organized.
Results: There was paucity of oral health promotion in the eastern states of India. Oral health promotion at schools in Indian context is infrequently offered by the oral health professionals, oral health education is offered to school children as a part of dental checkup and treatment camps that are organized infrequently by the educational institutions.
Conclusions: The concept of utilizing teachers for frequent oral health education and screening of any gross deposits of food debris or calculus and dental caries is practicable. Also regular oral health education by teachers was more effective than irregular oral health education by the oral health professionals.

Keywords: Dental health, Oral hygiene, Oral health promotion, School oral health program

INTRODUCTION

The World Health Organization defines oral health as the state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal disease, tooth decay and tooth loss and other diseases and disorders that affect the oral cavity.[1]

Health promotion has been defined by the World Health Organization's (WHO) 2005 Bangkok charter for health promotion in globalized world as the process of enabling people to increase control over their health and its

determinants, and thereby improve their health.[2] Oral diseases include dental caries, periodontal diseases, noma, dental erosions, dental fluorosis, oral cancer etc, with dental caries, tooth loss and periodontal diseases causing major public health problems. Oral diseases such as dental caries and periodontal diseases are among the most common and widespread diseases affecting about 80% of school children across the globe.[3] A healthy mouth enables an individual to speak, eat and socialize without experiencing disease, discomfort or embarrassment, Children who suffer from poor oral health are 12 times more likely to have restricted days of activity than those who do not.[4] Oral diseases can lead to pain and tooth loss, a condition that affects the appearance, quality of life, nutritional intake and consequently the growth and development of the children and this effect of untreated oral diseases on growth, development and well-being of the children is often ignored. The cost of treating dental caries can alone overwhelm a country's healthcare expenditure for children and India as a developing country faces many challenges in delivering oral health needs.[5] Considering the reduced budget allocation for oral health care delivery in developing nations the best possible approach to tackle the burden of oral diseases is to focus on the prevention. Oral diseases are preventable in their early stages, but unfortunately, the children, parents, school teachers and even the policy makers are unaware of the self-administered oral hygiene measures.[6] According to the WHO oral health database the prevalence of oral disease is approximately 83% and this can be attributed to lack of oral health promotion. Oral health promotion aims at preventing oral disease and promoting oral health at early stages, educational centers like schools are powerful places to shape the health and wellbeing of the children, and favorable health related behaviors can be best established in pre-adolescent and once established offer a promise to be sustained during adulthood as well.[7] Further schools provide an ideal setting to deliver oral health education in combination with preventive health services to achieve oral health promotion. Worldwide schools have been recognized as a perfect set up to deliver oral health education and preventive health services in an efficient and effective way. Moreover school based approach has been reported to be more efficient in delivering preventive and curative health services than community based approach.

METHODS

Literature search strategy

The literature search was conducted using the PubMed and Medline databases and WHO, MOHFW to identify potentially relevant studies with an oral health promotion component in them. The articles selected were divided into five categories; divisions were made based on those originating from North, South, Central, East and Western parts of India.

North: Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Bihar.

East: Arunachal Pradesh, Assam, Nagaland, Mizoram, Manipur, Meghalaya, Tripura.

West: Gujarat, Maharashtra.

Central India: Madhya Pradesh, Chhattisgarh, Odisha, Jharkhand, West Bengal.

South: Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Telangana.

Inclusion and exclusion criteria

This current academic research includes open access articles related to school based oral health promotion in children aged 6 - 17 years, from 2000 to 2014 which are published in English, and those related to adults are excluded.

The collected literature was categorized into the following format for analysis; Author, Year of study, State, Age group of population and Type of oral health promotion.

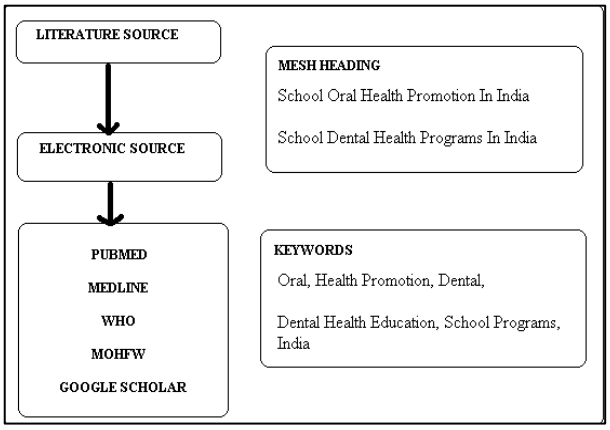

Figure 1: Flow design of methodology adopted for present study.

RESULTS

Table 1: Zone wise distribution of articles for the present study.

Geographical division	No. of articles sourced
North	3
South	7
Central	1
East	0
West	3

A total of thirty nine articles related to oral health promotion among humans were sourced of which fourteen articles were found to be relevant to school oral health promotion and hence were included in the present review. Rest of the articles focused on knowledge, attitude and practices related to oral health and studies focusing on adult oral health, hence not included. Data from all the fourteen articles was decisively analyzed. Oral health promotion at schools in Indian context is infrequently offered by the dental professionals as a part of dental check-up and treatment camps that are organized sporadically.

The concept of utilizing school teachers for frequent oral health education and screening for any gross deposits of food debris and calculus is feasible and more effective than the infrequent oral health education by oral health professionals. Further there is shortage of school oral health programs in eastern division.

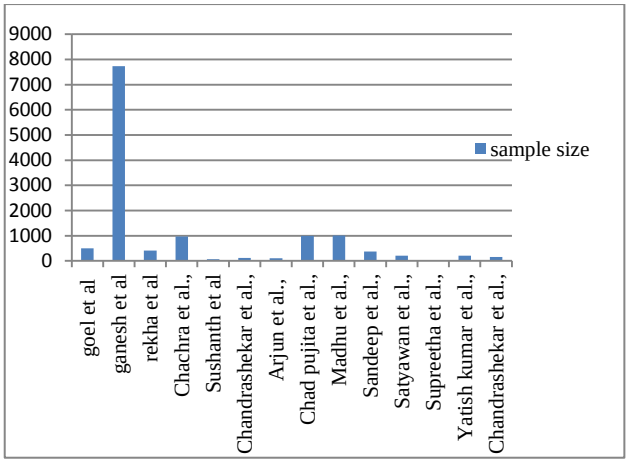

Figure 2: Sample size used in various other studies.

Table 2: Summary of school oral health promotion activities in India.

Authors	Year of publication	Study area	Study population	Type of oral health promotional activity
Goel et al[8]	2005	New Delhi	10- 13 year	Professional instructions, charts, models
Ganesh et al[9]	2010	Gujarat	5 - 16 years and parents and teachers	Professional instruction, using charts and models screening and treatments
Rekha et al[10]	2010	Karnataka	12 - 13 years	Evaluation of oral health
Chachra et al[11]	2011	Haryana	5-16 years	Professional instruction, fluoride application,Charts and brochures
Sushanth et al[12]	2011	Pondicherry	11- 16 years	Oral hygiene instructions, fluoride application
Chandrashekar et al[13]	2012	Andhra Pradesh	12 - 15 years	Oral hygiene instructions to teachers and students, fluoride application, brochures
Arjun et al[14]	2013	Chandigarh	10 - 12 years	Oral health education using visual aids, topical fluoride application
Chad pujita et al[15]	2013	Andhra Pradesh	School teachers	Professional education regarding dental trauma in children and their emergency management
Madhu et al[16]	2014	Bilaspur (cg)	12 - 15 years	Education regarding misaligned teeth
Sandeep et al[17]	2014	Andhra pradesh	6 - 16 years	Oral hygiene instructions, visual aids
Satyawan et al[18]	2014	Maharastra	12 - 15 years	Oral hygiene instructions
Supreetha et al[19]	2014	Coorg (karnataka)	School teachers	Professional education regarding dental trauma in children and their emergency management
Yatish kumar et al[20]	2014	Gujarat	12 -15 years	Oral hygiene instructions, dietary habits, fluoride application,
Chandrashekar et al[21]	2014	Andhra pradesh	15 years/ school teachers	Oral hygiene instructions, brochures

DISCUSSION

There are no organized school oral health programs in India at regional/national level. Furthermore, there is scarcity of published literature on feasibility and efficacy of pilot projects on school oral health programs in Indian setting. There is a need to have sound evidence based school oral health program, which can help policy makers develop and administer school oral health services. A search of literature depicts that interactions between oral health and systemic health are bidirectional and complex involving many pathways.[22] Kay E and Locker reported that oral health education has a positive impact in

lowering plaque and gingivitis scores in oral health education programs.[23] Oral health promotion has become an important and integral part of general health services in recent years. Oral hygiene promotion is most effective among younger populations and can be targeted both as beneficiaries and as agents of behavioral change within their families and their communities.[24] In India the point prevalence studies conducted in various parts over last four decades depict a consistently increasing prevalence of dental caries.[25] To prevent the increasing trend oral diseases in India, the most effective method appears to be community based, as has been proven beyond doubt from the developed countries of the world.[8] Children who suffer from poor oral health are 12 times more likely to have more restricted activity days, including missing school, than those who do not. Annually more than 50 million hours are lost from school due to oral diseases.[26] Oral health educations encompasses publicity campaigns, occasional talks at an elementary school, showing of dental health films, and an extensive reinforced program in a school curriculum.[27] The best time for educating the child about dental health is when their healthy habits are emergent. [28] The higher the age of the child when imparting dental health education, higher is the retention when compared to primary school children who have lower intellectual capacity levels. There are a few limitations of this study. Since the study is based on review of earlier studies which were conducted in different time periods by different investigators an in different study settings the generalizability may be erroneous, though attempts were made to include studies having large sample size, with an oral health promotion component in them, but it is possible that some relevant data may have been skipped in terms of fugitive literature (conference proceedings, dissertations etc.)

CONCLUSION

The results of this study showed that there is scarcity of oral health promotion across India. Oral health promotion at schools in Indian context is uncommonly offered by the dental professionals as a component of dental check - up and treatment camps that are organized intermittently. The concept of utilizing the teachers for frequent oral health education and screening of any gross deposits of food debris and calculus is more helpful and viable. There is no government initiatives related to oral health, existing in India. It is apparent from the current study that the most common oral health promotional activity is professional oral hygiene instructions using models and charts. There are some recommendation listed here; Several state level programs can be undertaken to tackle the current situation in India, particularly in eastern states where there is a paucity of such data or oral health promotion. The oral health promotional programs should be framed in such a manner that they are accepted socially and accessible to the children of all age groups. For example school teachers can be used for periodic reinforcement of basic oral hygiene measures through audio visual AIDS, inclusion of an oral health component into the existing school health programs and national health programs for children is urged. Further topical fluoride application for preschool and school children can be made obligatory with exemption to fluoride endemic areas.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. World Health Organization. Available at: http://www.who.int/topics/oral_health/en/. Accessed on 5-1-2016.
2. World Health Organization. 2005. Bangkok charter on health promotion. Available at: http://www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/. Accessed on 6-1-2016.
3. Peterson PE. The World Health report 2003. Continuous improvement of oral health in 21st century: The Approach of WHO Global Oral Health Program. Available at: http://www.who.int/oral_health/media/en/orh_report03_en.pdf. Accessed on 6-1-2016.
4. Watt RG. Strategies and approaches in oral disease prevention and oral health promotion. Bull World Health Organ. 2005;83(9):711-8.
5. Yee R, Sheiham A. The burden of restorative dental treatment for children in Third World Countries. Int Dent J. 2002:52:1-9.
6. Amalia R, Schaub RM, Widyanti N et al. The role of school-based dental programme on dental caries experience in Yogyakarta Province, Indonesia. Int J Paediatr Dent. 2012;22:203-10.
7. Peterson PE, Danila I, Samoila A. Oral health behavior, knowledge, and attitudes of children, mothers and school teachers in Romania in 1993. Acta Odontology Scand. 1995:53:363-8.
8. Goel P, Sehgal M, Mittal R. Evaluating the effectiveness of school-based dental health education program among children of different socioeconomic groups. J Indian Soc Pedo Prev Dent. 2005;23:131-33.
9. Ganesh M, Shah S, Choudhary P. School dental health programme: a potential untapped yet? The J Ahmedabad Dent College and Hospital. 2010;1(1):22-8.
10. Shenoy RP, Sequeira PS. Effectiveness of a school dental education program in improving oral health knowledge and oral hygiene practices and status of 12- to 13- year old school children. Indian J Dent Res. 2010;21:253-9.
11. Chachra S, Dhawan P, Kaur T. The most effective and essential way of improving the oral health status education. J Indian Soc Pedod Prev Dent. 2011;29:216-21.
12. Sushanth VH, Krishna M, Suresh Babu AM. A peer group approach model of oral health promotion

among orphans at Puduchery, South India. J Int Society Prev Community Dent. 2011;1(2):71-5.
13. Chandrashekar BR, Suma S, Kiran K. The use of school teachers to promote oral hygiene in some secondary school students at Hyderabad, Andhra Pradesh, India: a short term prospective pilot study. J Fam Community Med. 2012;19:184-9.
14. Gauba A, Bal IS, Jain A et al. School based oral health promotional intervention: Effect on knowledge, practices and clinical oral health related parameters. Contemporary Clinical Dent 2013;4(4)493-9.
15. Chada P, Nuvvula S, Shilpa G et al. Informative promotional outcome on school teachers' knowledge about emergency management of dental trauma. J Conservative Dent. 2013;16(1):21-7.
16. Pandey M, Singh J, Mangal G. Evaluation of awareness regarding orthodontic procedures among a group of preadolescents in a cross-sectional study. J Int Society Prev Community Dent. 2014;4(1)44-7.
17. Sandeep V. Impact of visual instruction on oral hygiene status of children with hearing impairment. J Indian Society of Pedodontics Prev Dent. 2014;32(1):39.
18. Damle SG, Patil A, Jain S. Effectiveness of supervised toothbrushing and oral health education in improving oral hygiene status and practices of urban and rural school children: a comparative study. J Int Society Prev Community Dent. 2014;4(3)175-81.
19. Shamarao S, Jain J, Ajagannanavar SL. Knowledge and attitude regarding management of tooth avulsion injuries among school teachers in rural India. J Int Society Prev Community Dent. 2014;4(Suppl 1): S44-S48.
20. Sanadhya YK, Thakkar JP, Divakar DD, Pareek S, Rathore K, Yousuf A, et al. Effectiveness of oral health education on knowledge, attitude, practices and oral hygiene status among 12–15-year-old schoolchildren of fishermen of Kutch district, Gujarat, India. Int Maritime Health. 2014;65(3):99-105.
21. Chandrashekar BR, Suma S, Sukhabogi JR, Manjunath BC, Kallury A, et al. Oral health promotion among rural school children through teachers: an interventional study. Indian J Public Health. 2014;58(4):235-40.
22. Johnson NW, Glick M, Mbuguye TN. Oral health and general health. Adv Dent Res. 2006;19:118-21.
23. DAKay E, Locker D. A systematic review of the effectiveness of health promotion aimed at improving oral health. Community Dent Health. 1998;15:132-44.
24. Arnott R, Rowse J. Peer group effects and educational attainment. J Public Econ. 1987;32:287-305.
25. Khera N, Tewari A, Chawla HS. Intercomparison of prevalence and severity of dental caries in urban and rural areas of North India. J Indian Soc Ped Prev Dent. 1984;2:19-25.
26. Brunelle JA, Carlos JP. Change in the prevalence of dental caries in U.S. School children, 1961-1980. J Dent Res. 1982;61:1346-51.
27. Emler BF, Windchy AM, Zaino SW, Feldman SM, Scheetz JP, et al. The value of repetition and reinforcement in improving oral hygiene performance. J Periodontol. 1980;51:228-34.
28. Gauba A, Bal IS, Jain A, Mittal HC. School based oral health promotional intervention: Effect on knowledge practices and clinical oral health related parameters. Contemp Clin Dent. 2013;4:493-9.

Cite this article as: Nalli S, Bindiganavale SR, Chowdary BUK. A study of oral health promotion activities in India. Int J Community Med Public Health 2016;3:2270-4.