
Review Article

The Role of Schools in Improving Non-Medical Determinants for Primordial Prevention and Positive Dental Health Behaviors: Proposals to Be Implemented and the Challenges and Opportunities for India

Susan Thomas

Professor and Head, Public Health Dentistry Department, Government Dental College, Gandhi Nagar, Kottayam-686008, Kerala, South India

ABSTRACT

With the changing health care system and increased emphasis on cost containment, the role of oral health professionals particularly in developing countries like India needs to expand into health promotion and oral disease prevention. Integrating oral health into the holistic general health policies and combating their shared risk factors with a single approach is resource efficient. Awareness and hazards of health risky behaviours does not necessarily translate into safe behaviors. This article discusses the challenges in implementing health policies to reduce the health risk behaviors and suggests measures to design effective community school service programs to achieve health promotion. A cost effective way for motivating behaviour change is by fostering emotional empathy and motivational learning at a young age through effective volunteering. The increase in ability to identify with another's experience allows children to engage in more effective helping strategies. Volunteering can provide opportunities to develop a restorative approach such as caring for a sick friend, regularly helping an elderly neighbour.

Successfully motivating behaviour change by enhancing emotional empathy and motivational learning at a young age is a challenge for today's oral health professionals. In order to effectively meet our nation's challenges and best safeguard the overall health of today's youth, school-based service programs that demonstrate positive social-emotional and behavioral outcomes could be implemented.

Key words: Health care reform, Health promotion, Preventive medicine, Risk factors, Oral health, School health services

INTRODUCTION

Improving health is central to the Millennium Development Goals. The public sector is the main provider of health care in developing countries. In the 21st century, health is a shared responsibility, involving equitable access to essential care and collective defense against transnational threats. With new and emerging public health threats added to the persisting

problems, the reforms of WHO need to be flexible in order to address the increasingly complex challenges of health systems in the 21st century. The focus of health promotion on policies of WHO since the 1980's remains an expenditure rather than an investment.^[1] Further research is a need to justify the effectiveness of health promotion in achieving predetermined outcomes. The short-term measures of effectiveness are

seen as changes in individual knowledge and skills as a result of educational intervention and social action. The long-term effectiveness of health promotion is seen in changes in the determinants of health along with the short-term outcomes. These include changes in individual health behaviors as well as changes in the socioeconomic and environmental conditions. [2]

Substantial literature has evaluated the effectiveness of various health education intervention studies. It has been concluded that the evidence pertaining to the effectiveness of health education in attitude and behavior change is poor.

India is the second most populous country of the world and has been experiencing transition in socio-political-demographic, economic and morbidity patterns that have been greatly influencing the health development. Some of the factors influencing the health environment in India include the ageing population, altered health behaviors, increasing purchasing power, changing dietary patterns and an increase in peoples' expectations of health care services. Almost 75% of health infrastructure, medical manpower and other health resources are concentrated in urban areas where 27% of the population lives.

India is a young nation in which an estimated 65% of the 1.2 billion citizens is under the age of 35 years. Since the Indian population is so skewed towards the young, the country must invest in its education and health care in order to ensure its economic growth. Today's youth engage their time in a broad range of health risky behavior. Despite rising public awareness and behavioral expectations regarding prevention of health-risky behaviors, the health challenges of today's youth are on the rise. Epidemics of alcohol and drug abuse, use of various forms of tobacco, rash and reckless vehicle driving, improper diet intake, physical inactivity and domestic violence have dramatically increased the risk of chronic non-communicable diseases such as heart disease, stroke, cancer,

diabetes, dental diseases, orofacial trauma and others, which limit the ability to function physically. This study proposes to implement a behavior-change approach through school service program that can encourage the participation of the school community in adopting positive health attitudes and behaviors. The challenges presented by today's behaviorally at risk youth and the need for a reform in school health intervention programs as a cost effective tool for health promotion are discussed. Preventing the modifiable health risky behaviors early in life and reducing oral disease burden and disability can have a significant positive impact on the quality of life.

Current scenario of health status

NCDs are the leading cause of mortality, morbidity, disability and hospitalization. Out of the 58 million deaths worldwide, chronic diseases cause 35 million and this figure is expected to rise by 17% over the next ten years. In India NCDs account for 60% of all deaths and the probability of dying during the most productive years (ages 30- 70) from one NCD is ahead of many communicable diseases. NCDs account for 235 million disability-adjusted life years (DALYs), 40% of all hospital stay and 35% of all recorded hospital out patient. Four of every five people who die of chronic diseases live in countries with predominantly low and middle-income populations. By reducing the life expectancy of fathers and mothers and increasing the number of orphans each year, this epidemic of non-communicable diseases has burdened the economy by billions of dollars.

Studies have shown that the epidemic of chronic non-communicable diseases is rising, especially among the adolescent and youth population of India. NCD care provided in India is largely focused on managing long term patients with morbidity and disability in the secondary or tertiary care institutions where as the role of the primary health care

institutions is minimal. With the life style diseases on the rise, the cost of health care in India has been rising over the years. India is estimated to be spending around 5 percent of the GDP on health and much of this expenditure is incurred on private health services. This high expenditure is a reflection of the relatively high disease burden. Health care costs make up 7-9 percent of the average household's annual expenditures. It is estimated that the poor spend 12 percent of their incomes on health care.

Oral health problems like dental caries, periodontal disease and orofacial injuries have many of the same risk factors as common chronic diseases. These oral diseases are important public health problems because of their prevalence, impact on individuals' overall health and quality of life and are expensive to treat, despite being preventable. The link between oral health and general health are important for determining appropriate oral health care programs. Considering the health complications associated with the risk factors it is important to understand the contributing factors, which lead to the growing prevalence of health-risky behaviors and plan strategies to prevent them

Health-risky behaviors and their implications

Health-risky behaviors developed at a young age can undermine healthy living and longevity. One of the biggest challenges that primary care practitioners face is helping people to change long standing behaviors that pose significant health risk.

Cigarette smoking is a major and entirely preventable cause of the burden of disease in middle and high income countries. The habit of smoking among children is common, irrespective of the income and education of their parents. [3] In the western countries tobacco addiction is seen among both genders and a declining trend in smoking among school students is evident. About 20 million children of ages

10-14 years are estimated to be tobacco addicted according to a National Sample Survey done by the Indian Government. [4] The prevalence of smoking tobacco in India is more among the male children and adolescent as compared to females who use more of smokeless tobacco. Users of both smoking and smokeless tobacco are well aware of the adverse effects of the habit and the information on the hazards of tobacco use may not be enough to reduce its prevalence.

Smoking harms nearly every organ of the body. Periodontitis resulting in tooth loss is common among the smokers. The decrease in number of functional tooth units is a critical factor indicating reduced chewing efficiency. Poor oral health conditions such as periodontal disease can be a significant marker for other systemic diseases and can have an impact on oral health diagnosis and treatment outcomes. Smokers are at greater risk to develop cardiovascular diseases, stroke, cancer and chronic obstructive lung disease (COPD) which is the fourth leading cause of death. Physician counseling has not significantly influenced the decision of patients with COPD to quit the smoking habit. Studies have shown that only the victims diagnosed as COPD who were aware of the health consequences of the disease were willing to quit the smoking habit as compared to those who were not aware of the diagnosis. [5] The global tobacco control effort continues to face many challenges in reversing the tobacco epidemic. The evidence from studies shows that the reasons for using tobacco were to feel relaxed, to spend free time, to attract the attention of others, the influence by smokers in the family and friends, peer pressure and social media such as advertisements.

Pleasure gained by drinking alcohol is an important motivator regardless of the pain and suffering caused by alcohol abuse. Alcohol consumption will always be a critical public health issue worldwide. Although many health agencies have adopted reduced national alcohol

consumption as a target it may be hard to achieve. The role of pleasure drinking among policy makers face long odds in policy consideration. A significant correlation has been shown between excitement seeking among young adults and risky driving behavior leading to accidents. Road traffic accidents are a major public health problem in developing countries, and India tops the list of road death across the world. The leading cause of death among youth below 35 years of age involves alcohol impaired driving. [6] Reckless driving, over speeding, declining to follow traffic rules, and drunken driving are main reasons for road accidents. Increased risk of injury to the regions of head and neck from factors such as road traffic accidents and falls as well as injury-related absenteeism resulting in reduced labour productivity in the place of work are also related to excessive alcohol consumption. Physical violence of the alcoholic towards their intimate partners and elderly can be a reason for injury to the face and can affect the victims psychosocially. Patterns and volume of alcohol consumption affect cognitive and psychomotor functioning. The risk of HIV infection has been added to the incidence of alcohol related chronic diseases such as liver cirrhosis and cancer. Studies have shown that youth who are alcohol dependent and use illicit drugs are more likely to have psychological and physical health problems. According to WHO, the disease burden from alcohol is 23.7 (DALYs in millions). Despite the Government's prohibition policies towards alcohol and tobacco abuse there continues to be a dramatic rise in substance abuse. This explains the need for reforms in such awareness programs.

Drug prevention in schools is a top priority in most Western countries; however, most prevention programs are not effective.

Diet and Nutrition are major indicators of health status. Nutrition related risk factors have shown an increased contribution to the Global burden of Non

communicable diseases such as obesity. The development of globalization and urbanization coupled with rapid economic growth have stimulated the nutritional transition of India. Approximately 80-85% of the Indian population consumes energy dense commercially processed food. Dietary behaviors such as unhealthy food and beverages choices have dominated the traditional diet. Frequent snacking results in excessive consumption of energy-dense foods, which are low in nutrients and high in saturated fat, salt and added sugar. The time spent on sedentary activities such as watching television and playing computer games is positively correlated with BMI and with higher and frequent consumption of unhealthy foods. [7] Childhood obesity has both immediate and long-term serious health impacts. Obese children face higher risks for many diseases, such as heart disease, diabetes, stroke, and several types of cancers, which were once believed to affect only adults. [8]

Fermentable carbohydrates in sweetened beverages and fruit juices can be risk factors for dental caries. Dental decay is the second most costly diet related disease with economic impact comparable with heart disease and diabetes. In spite of policies and actions to create healthy food environments and reduce prevalence of obesity, and related diseases, serious action from governments and the food industry has been slow and inadequate.

Adolescent problem behaviors such as teenage pregnancy, school failure and school dropout result in enormous costs each year both to individual adolescents and the larger society.

Innovative cost-effective school-based intervention programs.

Early adolescence undergoes rapid and profound personal changes between the ages of ten and fifteen years. The desire of young people for peer acceptance and the need to belong to a particular social group are often intense. Changes in the social and economic development in our society as

well as the increasing influence of the media has exposed today's children to early risky and destructive behaviors that could pose a danger to youth themselves, and the larger society. With changes in the family structure many children grow up lacking adequate supervision. Irrespective of the disparity of income in families, children who grow up with lack of parental guidance are likely to develop risky behaviors. Often times these young adolescents witness the negative results of poverty, drug and alcohol abuse and crime. Schools normally adopt a punishment-oriented approach in relation to at-risk students. Even so, schools alone can do very little to influence the risk factors as their influence occurs outside the school settings. Highly cost-effective strategies and reasonable, efficient intervention efforts as early as possible in a child's life remain a great challenge as expertise and resources from public health and social service agencies are needed. In order to implement community wide prevention initiatives, if schools are to become more successful in health promotion, they must become better partners with families and community agencies in consortia. ^[9]

It is a great concern that the schools of yesterday are ill suited for meeting the challenges of today's world. Lack of social - emotional competencies such as empathy and decision-making is a key challenge for the 21st century schools. Health promoting schools should focus on empowering youth to foster multiple healthy life style behaviors. Community service programs initiated by schools must be able to empower today's youth to be responsible and enable them to make wise decisions.

Knowledge gained through conventional health education does not bring sustained changes in health risky behaviors. To address the limitations of conventional education an innovative school health reform, such as community based service learning or volunteering helps create a balanced partnership between communities and schools, thus serving the community and meeting defined learning

objectives. Service learning can be defined as a teaching strategy that explicitly links community service experiences to classroom instruction. This helping behavior activity in which leisure time is given freely to benefit another person has been valued as a means of responding to the human resource needs. "To Care" is to feel for those who are ill, confused, lonely, isolated and forgotten and to recognize their pain in our own hearts. An intrinsic concept of caring is being able to empathize, to empower and to engage. Empathy is an integral means of knowing and relating to others and adds to the quality of life and the richness of social interactions. It plays a key role in the development of social understanding and positive social behaviors. A child's cognitive perspective-taking skills and judgement develop with age. By late adolescence an individual has gained the ability to consider multiple perspectives, feel concern and incorporate these in the way they analyze and act upon situations. Evidence has shown that feeling empathy for a person in need is an important motivator in helping. Attending a school with a pro-social behavior model as opposed to a traditional high school offers an increased opportunity for students to develop their awareness of others and think critically about their responses to other people's needs.

The findings from a meta-analysis of 213 school-based SEL (social and emotional learning) programs demonstrated that there was significant improvement in social and emotional skills, attitudes, behaviors and academic performance as compared to the control group. ^[10] Advances in research and field experiences confirm that school-based programs that promote social and emotional learning (SEL) in children can be a powerful innovative educational approach to enhance student health and reduce the prevalence of health-risky behaviors.

The same research demonstrated that both parents and teachers were happy with the potential for service learning to impart practical experience, improve academic

performance, promote better citizenship and aid in personal development. ^[11]

In the past decade the percentage of high school students participating in service learning in the U.S has grown by leaps and bounds. Before their completion of high school a vast majority of youth take part in at least one youth community service program. The results of a study by Lakin, suggest that taking part in the community service program was experienced as both empowering and promoting a sense of cooperation and collective decision making. ^[12] An increase in youth's self-reported empathy and the willingness to be involved in future community services was reported in the experimental group as compared to the control group. Offering volunteering experiences in schools helped the middle school students to learn new skills and make real choices in life. The level of success in reducing problem behaviors was evaluated using a pre-post-test design and a well matched comparison group. The teen outreach program also promoted student autonomy and relatedness with peers ^[13] Well organised youth community service programs can effectively reduce risky sexual behaviour as demonstrated in urban African-American and Latino young adults. Including students in health education classes as well as service programs could have a positive impact on risk for HIV, sexually transmitted diseases and unwanted pregnancy. ^[14] The efforts to use college students as volunteers with mature adults to promote fitness has encouraged people to actively participate in appropriate physical and recreational activities. As a result of the fitness health promotion program, the participants of the geriatric set up and the volunteering college students showed a desire for improved quality of life as well as increased longevity. ^[15]

With the rapid increase in the numbers of older persons with financial, social, emotional and especially health problems there has been a rising demand for services. The interaction of college with the elderly through visits to the elderly nursing

home residents resulted in substantial improvements in the residents' psychosocial and physical conditions and had a positive impact on the students' perceptions of aging. ^[16]

In India various school youth volunteering activities and opportunities can be expanded through its existing National school health programs that encourage participation of the school community in adopting positive health attitudes and behaviors.

Youth services can be of immense help in developing countries where there is an increase in geriatric population especially with no social security, dwelling with loneliness, with comorbid health conditions and under multidrug therapy. Preventive services related to taking the elderly to the hospital for regular health checkup can decrease the hospital visits and stay. Spending time for their shopping needs and involving with activities such as music, games, reading story books and newspapers could enlighten the lives of the elderly. Volunteers can be of importance by maintaining full functions of immobilized patients who suffered injuries and chronic illness in their communities. Support of individuals with functional disabilities through rehabilitation can reintegrate them into the community.

Based on the comfort level and available leisure time volunteers can provide formal and informal teaching program at child care centers, primary and secondary school. Apart from academics, volunteers can teach the importance of sports and conduct various extracurricular activities within school. Childcare and orphanage volunteering programs are challenging. Humanitarianism and Volunteerism experienced with the visually challenged, the hearing and speech impairment, the physically handicapped and also those with mental disabilities are opportunities with extra challenges

CONCLUSION

Many of today's and tomorrows leading causes of premature death, disease and disability can be significantly reduced by preventing health-risky behaviors that are initiated during youth. A comprehensive mission for today's schools is to educate students to be knowledgeable, responsible, socially skilled, health caring and contributing citizens. Suggestions to implement and evaluate successful school volunteering programs could help to empower today's youth to enhance their level of empathy and thus choose healthy behavior lifestyles. Research shows that youth volunteering during leisure time has reduced the likelihood of their engaging in risky behavior. The impact of a healthy population on the economic growth are seen in several ways such as decreased expenditure on the health system and households, decreased rates of early retirement, increased productivity ,more available labour and decreased ratio of dependents to workers. To maintain healthy lives and promote well being at all ages a more family centered and continuing care model with optimum use of primary and specialised care can ensure health contribution to sustainable development. Support from policy makers, educators, the public and the parents can lead to an increase in the number of health promoting schools which will have an impact in improving the health of today's youth as well as the economy of the nation.

REFERENCES

1. Kickbush I. The contribution of WHO to a new public health and health promotion. *Am J Public Health.* 2003; 93(3): 383-388.
2. Nutbean D. Challenge to provide evidence in health promotion. *Health Promo Int.* (1999) 14 (2):99-101.doi: 10.1093/heapro/14.2.99
3. Surani S, Sudhakaran S, ApolinarioM, Surani S, and GuntupalliK. Does Income and education of parents correlate with the smoking habits of children? *Chest.* 2011; 140(4-meetingabstracts): 377A. Doi: 10.1378/chest.1114194
4. Chadda RK, Sengupta SN. Tobacco use by Indian adolescents. *TobInduc Dis.*2003; 1:8. Doi:10.1186/1617—9625-1-8
5. Osmund UA, Fahrad A. Impact of COPD Diagnosis on the smoking habit of patients. *Chest.* 2008; 134 (4-meeting abstracts): p. 19,003.
6. Gopalakrishnan SA. Public health perspective of road traffic accidents. *Family Med Prim care.*2012;1:144-150
7. Wiecha JL, Peterson KE, Ludwig D S, Kim J, Sobol A, Gortmaker S.L. When Children Eat What They Watch: Impact of Television Viewing on Dietary Intake in Youth. *Arch Pediatr Adolesc Med.* 2006; 160(4): 436-442.Doi: 10.1001/archpedi.160.4.436.
8. Center For Disease Control, "Make a Difference at Your School" 2013.[Internet] Available from: <http://digitalcommons.hsc.unt.edu/disease/31> Accessed [5 August 2014]
9. Walker HM, Shinn MR. Structuring school-based interventions to achieve integrated primary, secondary, and tertiary prevention goals for safe and effective schools. *Interventions for academic and behavior problems II: Preventative and remedial approaches.* Washington DC, US. 2002 , pp. 1-25.
10. Durlak JA, Weisberg RP, Dymnick AB, TylorR.D, Schellinger KB et al. The impact of enhancing students' social and emotional learning: A Meta-analysis of school based universal interventions. *Child Dev.* 2011; 82 (1):405-432. doi: 10.1111/ j.1467-8624.2010.01564.x.
11. Billig SH. Research on K-12 school-based service learning. *Phi Delta Kappan* 2000; 81(9): 658-664
12. Lakin, R., Mahoney A. Empowering youth to change their world: Identifying key components of a community service program to promote positive development. *Journal of School Psychology.*2006; 44 (6): 513–531.DOI: 10.1016/j.jsp.2006.06.001
13. Allen JP, Kuperminc G, Philliber S, Herre K. Programmatic prevention of adolescent problem behaviors: The role of autonomy, relatedness and volunteer

- service in teen outreach programs. American journal of community Psychology 1994; 22 (5) : 617-638 DOI 0.1007/BF02506896
14. O'Donnell L, Stueve A, Doval AS, Haber D, Antafou R, Johnson N et al. The effectiveness of the Reach for Health community youth service programs in reducing early and unprotected sex among urban middle school students. Am J Public Health. 1999;89(2): 176-181.
15. Colston L, Harper S, Mitchener-Colston W. Volunteering to promote fitness and caring: A motive for linking college students with mature adults. Activities, Adaptation & Aging.1995; 20 (1): 79-90.
16. SallyN, CharlesWL, Roland STO. The development of an intergenerational service-learning program at a nursing home. The gerontologist. 1985; 25(2):130-133. doi: 10.1093/geront/25.2.130

How to cite this article: Thomas S. The role of schools in improving non-medical determinants for primordial prevention and positive dental health behaviours: Proposals to be implemented and the challenges and opportunities for India. Int J Health Sci Res. 2017; 7(9):255-262.
