Prevention of Oral Cancer and Its Risk Factors by Health Workers through Health Education- A Review

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Abstract

Oral cancer is largely prevalent in India, mostly affecting the marginalized communities. Its causes are attributed to tobacco and alcohol consumption resulting in severe mortality and morbidity. Hence it is a major public health problem. The risk factors being preventable, this itself is an advantage for public health professionals. But other challenges also exists as these risk factors are influenced strongly by the socioeconomic, cultural, regional, lifestyle and psychological aspects. Creating awareness about the effects of these risk factors to the community is crucial. WHO suggested to utilize existing health and education systems for oral health services in developing and lower economic nations. Health workers form a strong link between the community and health care in rural India. Hence they play a key role in creating and reinforcing health awareness in the community. This review explores possibilities of involving health care workers for educating community about oral cancer and its risk factors.

Keywords: *Prevention, Oral Cancer Risk Factors, Health Care Workers, Health Education*

1. INTRODUCTION

Oral cancer is the most common cancer in the world [1] with high magnitude and frequency in South-east Asian countries [2–4]. The mortality rate due to oral cancer is higher among males than females. The mortality is relatively high in low income, middle income and emerging economies due to limited accessibility to health facilities [5, 6]. In India the prevalence is high (20/100,000 population) and incidence is expected to rise by 2030 [2, 7, 8] . It ranks first in males and fourth in females among all cancers in India. In 2005, Gupta et al predicted that the incidence rate would be 50,174 in males and 28,245 in females by 2015. [7, 9]

There is evidence about the tobacco and alcohol use being main risk factors of oral cancer and Oral Premalignant disorders (OPMDs). The association is confirmed by the various studies particularly the cohort studies conducted in last 50 years in India.[10, 11] First cohort study was conducted in late 1960's and mid 1970's in Srikakulam, second was conducted in late 1990s in Pune and also in Ernakulam and the third in late 1990s to mid-2000 in Mumbai. In a recent study conducted in India, they predicted that from 2010 one in every ten deaths will be due to tobacco use. Various smoking and smokeless forms of tobacco are available in India which are used by 1/3rd of the population. Both the genders use tobacco in one form or the other. Males predominantly consume tobacco in the form of smoking either bidis or cigarettes. The statistics of past 100 years shows that the bidis are 10 times more commonly used than cigarettes . [2–4, 11–13]

It is evident from the literature that by avoiding the risk factors of oral cancer, it lowers the disease burden. [5, 14, 15]World Health Assembly in 2007 passed a resolution and declared their commitment in prevention of oral cancer by integrating into national cancer control programmes.[5] There are various initiatives taken by government of India to curb tobacco in the forms of policies and regulations. The usage of tobacco is associated with cultural, socioeconomic and behavioural reasons in most of the communities making it more challenging for the policy makers .[16] Nutbeam D suggested to improve health literacy of the community which

is possible through health promotion strategies [17] . Creating awareness among the community is most viable and the most cost-effective means both for the individual and the government [2] . In India there is no oral health care programmes in national health policy [18] that might have led to inequality in the distribution of dental professionals. Dentists are concentrated more in urban than in rural areas where there are more than 70% of the population [18–20] . Hence the disease burden is expected to rise as there is no feasible, sustainable oral health programmes in India [21] . The rising burden can only be tackled by creating awareness among the community.

Peterson et al suggested to integrate preventive and educational programmes regarding oral health into existing infrastructure in rural, urban and deprived areas especially in health and educational system [6] . In India health care system has been reaching most of the population in rural and urban areas [22] and primary health care personnel form a strong link in rural India. Anganwadi, ASHA, ANM, health workers etc who are selected from the community are close and in continuous communication with the people and their beneficiaries. In 2005 Crete conference on oral cancer suggested to involve oral and health professionals or primary health care workers by training them in detection oral diseases in early stages [5] .

Health education is the most important and powerful tool to address the issue as it is reported often in the literature that oral diseases are preventable if the risk factors which are responsible in causing disease are avoided [23–25] . The information given at the learning stage will be more beneficial to the people as it helps to take informed decisions. Health education helps us to have positive health behaviour at later stages [6, 26] . Health education based on theories or models help us to understand the factors that are influencing behaviours. This will be helpful in planning, implementing and evaluating interventions. They are valued in health promotion as they can explain influences on health [24, 27, 28] .

Hence this paper discusses the possibility of utilising health workers in preventing and educating about oral cancer and its risk in India.

2. SITUATIONAL ANALYSIS OF INDIAN SCENARIO

Dental Workforce Distribution

Good oral health is a fundamental right of every human being. Timely utilization of the oral health care services helps us to maintain optimum health. There exists an inequality of oral health services in both developed and developing countries that has resulted in reaching out to lesser fraction of the community [21, 29, 30.] In India, dental workforce includes dental professional and hygienists, which comprise 3.6% of all the professionals [20, 31] though there are 300 plus dental colleges. The dentist population ratio is 1:10,271. But the ratio in rural area is 1: 30,000 to 1:1,00,000 [19] . However, there is inequality in oral health because of maldistribution of dental workforce. The possible reasons are that there are no sufficient government jobs available and most of them choose private practice in urban areas or change their profession. Most common dental care delivery system is by private clinical practice, tertiary hospitals, teaching hospitals and colleges. Incorporating in existing primary health care system may help dentist to reach larger community[19] .The feasibility of providing primary oral care is a challenge because of no government intervention. As suggested in the literature utilizing existing health care and educational system will be beneficial to combat rising burden of oral diseases in developing and low economic countries[32].

Organized Health Care Delivery System

In India, National Oral Health Care Program (NOHCP) implementation strategies after pilot testing in five states have suggested that it will be sensible to integrate preventive and educational program. Health workers, Anganwadi workers and teachers are recognized as good ambassadors to transfer the ways and values of life in and outside the school. And to encourage the good practices of indigenous system and to create awareness of diseases and their prevention (like

dental caries, periodontal disease, oral cancer and maxillofacial injuries) [33, 34]. However, they too have limitations as it depends on their training and the responsibility they take to sustain the same.

In India, we have a three tier system of health care delivery. This includes primary level which consists of PHC and sub centres, secondary level consists of community health centre (CHC) and tertiary level which includes medical colleges, All India Institute of Medical Sciences (AIIMS) and other apex institutions. Primary health centre: PHC covers 30,000 (20,000 in hilly, desert and difficult terrains) or more population. Each PHC has staff of 15-17 members including medical officer, health assistants (Male & Female). Sub-centre: peripheral health institutional facility run by one male and one female (ANM) multipurpose worker that covers 5000 populations (3000 in hilly and desert areas and in difficult terrain). At Village level: One village health guide and one trained dai and voluntary health workers and ASHA (Accredited Social Health Activists) workers are posted [35].

Primary Health Care Workers in Prevention of Oral Cancer

WHO has given few of the recommendations for Prevention of Oral cancer that includes dissemination of information about the avoidance of risk factors that are responsible for oral cancer mainly tobacco, alcohol and diet factors. The health care delivery system can be utilized to educate community about the risk factors of oral cancer. By training and actively involving health workers in screening and providing basic care for oral cancer, integrating oral cancer information into national health surveillance systems that records common risk factors for the disease [36] .

PC Gupta et al in 1986 conducted an intervention for prevention of oral cancer in two states, Kerala and Andhra Pradesh by encouraging people to give up the tobacco related habit using personal advice and mass media. They observed that there were significant number of individuals who gave up the habit after the intervention. Oral lesions were also less among the intervention group when compared to the non-intervention group [37] .

Warnakulasuriya et al in 1988 trained 34 primary health workers in Sri Lanka in early detection of oral cancer and referral to the higher centers for treatment with their routine work. The findings of this study were satisfactory as 89% patients that were identified and referred were in correspondence to the clinical diagnosis, but only 50% patients identified reported to referral centers. Further in 1988 their team adopted few approaches like postal reminders and referrals to nearby centers that increased the compliance to 10.9%. Warnakulasuriya et al applied this model using existing Government Health Services to other places in Sri Lanka in 1997 and suggested this model to be feasible for developing countries [38–40]

In a study by Sankarnarayanan in 1997, they suggested that involving health workers was feasible in India. This will help in finding cases and providing health education when encountered with high-risk subjects. He conducted preventive programmes by dissemination of anti-tobacco health education messages and to examine high-risk individuals involving health workers and other health auxiliaries of the PHC system during their routine visits and community meetings. The author also mentioned further that there is no evidence in terms of efficacy and cost effectiveness to influence health administrators and also the acceptability by community health workers and other health auxiliaries for additional responsibility [41] .

Studies have been reported in the past regarding the Oral health awareness among the health workers in the literature and possibility of involving them for oral cancer prevention. Carter et al in 2009 suggested that the window of opportunity exists for health care provider to interact with the patients regarding oral diseases and assessed their awareness about risk factors for oral cancer and its clinical signs. Most of them (70%) knew smoking as a risk factor and only few (21%) identified the signs and symptoms [42] .

Frazao and Marques in 2009 conducted a

capacity building project among community health workers on oral health promotion and showed that there was improvement in the oral hygiene efficacy regarding self-examination, oral hygiene and dental service utilization. This finding also showed the possibility of involving health workers for oral health promotion is feasible [43] .

Apart from health care system, the Department of women and child health have the Integrated Child Development Scheme (ICDS). Anganwadi workers are the frontline workers of this program and form a key role, as their beneficiaries are mother and child and adolescent girls. The studies about their oral health awareness was conducted in various regions. Study in Mangalore by Sequeira et al suggested that 50% had myths about the oral health and its services. They concluded that though oral health is not considered in their service, their awareness itself may help people to spread positive oral health. Anganwadi workers form an important link between the health care and community through the services they provide even though they have a minimum education of tenth standard. This group already has sufficient work to do and have some complaints as reported by Thakre MM et al in 2011. The study group comprised of Anganwadi workers of Maharashtra who shared grievances about inadequate honorarium, lack of help from community and general problems reported with respect to infrastructure, work overload and record maintenance [44, 45] .

3. HEALTH EDUCATION IN PREVENTION OF ORAL CANCER AND ITS RISK FACTORS

Studies have provided information about integrating oral health information into existing health care systems that provides accessibility of information for the larger community who otherwise are deprived of the information. Health workers play a vital role in disseminating the information about the risk factors of oral cancer and their implications, its early signs and symptoms. Further their constant involvement with the community provides opportunity for reinforcement of the information. This facilitates in encouraging the individuals for utilization of oral health services.

Health education is an important aspect of health promotion. Health education is defined by Frazier in 1992 as "any planned combination of learning experiences designed to predispose, enable and reinforce voluntary behaviour conducive to health in individuals, groups or communities"[23].The outcome of health education is health literacy that helps people to make informed decisions. It is recommended that the health promotional activities should be more than health education to bring about behavioural change. The behavior of the individual is the result of various determinants like social, economic, environment and political factors. Hence health education alone will not be able to bring about the behavioural change in the individual, but also requires supportive environment provided by upstream forces. The positive health messages given at early stages influence the knowledge, beliefs and values which facilitates in acquiring the skills to change behavior [6, 24, 26]. The manifestations of the disease will depend on the habits and behaviours followed through the years. Hence education at early stages helps us to have positive health behaviour at later stages too[6, 26].

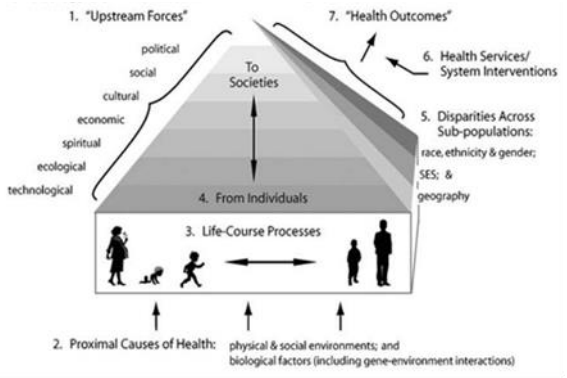

Fig. 1 Depicts the factors influencing the determinants for health and behavior

As the behavior factors are related to psychology the health education should be based on scientific basis to influence change in the behavior [17] . Theories or models help us to understand the

factors that are influencing behaviors. If the factors are properly understood the strategies and methods can be prepared which communicates better with the community and the goals are achieved. Theories are ‘‘useful in planning, implementing, and evaluating interventions’’ and are particularly valued in health promotion because they can explain influences on health as well as suggest ways where audience change can be achieved [27, 28] . There are various theories and models used by health educators such as Rational model, Health belief model, Theory of reasoned action, Transtheoretical model for behavioral change and Communication behavioral change theory and Persuasive health message framework (WHO). Most commonly, the Rational model is used for intervention as there is growing research assessing the reason and influences of people's behavior and its importance to plan the intervention considering the cultural and social factors.

In dentistry the theory based health education interventions are used to educate individuals about brushing and flossing behaviors, and avoiding the risk factors like tobacco and alcohol. Theory of Reasoned Action gives importance to attitudes and intentions which influences change in behavior. This theory considers intention as the most important determinant of behaviour. It further explains about the cognitive process influencing behavior change without sufficient knowledge and full intention to practice the healthy behaviour. The process explains i) the belief about what their significant other's think and then practice the behavior and ii) personal motivation to fulfil with those significant people. Other external variables that will influence attitudes and thus behaviours are internally processed within the context of importance. The Social norms and community expectations are powerful predictors of individual behavior according to the Theory of Reasoned Action [47, 48].

The education framework helps as a guide to prepare contents for health education for specific group of people. One such framework is Persuasive Health Message framework (PHMF). PHMF comprises of elements from the TRA given by Fishbein and Ajzen in 1975, the elaboration likelihood model by Petty and Cacioppo in 1986, and protection motivation theory by Rogers in 1983 that offers an integrated approach to generating effective campaigns. In brief, the PHMF explains two factors: the constant and the transient factors. These must be addressed prior to the development of any health campaign message [24, 27].

Effectiveness of theory based education are reported in the literature based on the community and the target group.

4. CONCLUSION

Oral cancer is one of the fatal oral diseases in developing countries. In India as there exists no national oral health policy and maldistribution of dental health care workforce, the disease burden is expected to rise. The rising burden can only be tackled by creating awareness among the community though existing health systems utilizing health workers as they form a vital link between health care system and community. Health education interventions and other preventive services can be planned as most of the risk factors are common. So there is a need for developing new or adapting existing models to the needs of diverse societies and larger communities in India.

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