

Socioeconomic Status And Oral Health In India - A Critical Review

Abstract

Relationship between socioeconomic status of individual and health, including oral health, is well established in literature. The conventional measures of socioeconomic status such as social class and household income, have a number of weaknesses so that alternatives, in the form of area-based measures of deprivation, are increasingly being used. The aim of this review was to locate, appraise evidence from scientific studies in order to provide informative empirical answers regarding association of socioeconomic status and oral health.

Key Words

Socioeconomic Status, Oral Health

Introduction

Oral health is an important part of general health and may be defined as the 'standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being' (Department of Health, 1994).^[1] Over the last few decades there have been improvements in oral health in India. However, inequalities in oral health exist throughout the region. Poor health precedes socioeconomic position in the causal pathway, and then there would be little point in addressing socioeconomic factors to reduce socioeconomic inequalities in health. However Selection or reverse causation plays only a minor role and most evidence shows that socioeconomic conditions precede health outcomes^{[2],[3]}. In 1998, the World Health Organization in Europe, listed the social gradient first among ten factors identified as the key social determinants of health and a major contributor to unequal health outcomes in populations^{[2],[3],[4]}. Individuals in the upper social class have a longer life expectancy, less mortality and a better health and nutritional status than those of lower class. A growing body of recent research suggests that communities with high levels of social capital, the norms and networks that enable people to act collectively^[5], have better general health and lower levels of mortality and morbidity. In UK, the Acheson Review highlighted the importance of the socioeconomic determinants of health inequalities and

identified a range of social and welfare policies to promote the health and well-being of the population^[5]. In USA, the Institute of Medicine has reviewed the evidence base for public health interventions and has recommended a change in approach. The report stresses the importance of focusing on the social determinants of disease, injury and disability, and of adopting a complementary range of different interventions to promote health. The World Health Organization global strategy for the prevention and control of non-communicable diseases also places emphasis on developing interventions which address the environmental, economic, social and behavioral determinants of chronic disease.^[5] A major problem facing dental policy makers is the persistent and universal nature of oral disease and how to tackle oral health inequalities. A substantial body of scientific literature from many countries has shown that the oral health of lower socioeconomic status groups is worse than their higher socioeconomic status counterparts. Despite significant overall improvements in oral health in recent decades across the developed world, social inequalities in oral health have remained even in countries with well-developed dental health care system.^[7] There are large numbers of studies linking social class to incidence of disease. Income, occupation and education these are the major components of most measures of social class and are positively correlated with health status.^[7]

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In dental health, the socioeconomic status has been recognized for years as a main factor for inequalities.⁸ In different areas in the Western world, oral diseases has been shown to be more frequent in the lower socioeconomic groups, with the more affluent having lower experience of oral diseases.^{[7],[8],[9]} there is no comprehensive review of studies of socioeconomic status and oral health in India Hence this review mainly concentrates on the studies done to assess the relationship between socioeconomic status and oral health in India.

Measuring Socioeconomic status

Measures of Socioeconomic status vary considerably, in terms of both the variables used as indicative of socioeconomic status and the level at which they have been constructed. They can be relatively simple single-item asset-based measures such as income, occupation, car and house ownership to more complex measures incorporating from four to 40 variables.^[10] These measures have been used at the individual, household and area level.

These differences arise because there is no commonly accepted definition of socioeconomic status and no theoretical framework to guide the selection of appropriate indicators^[11]. In a lengthy review of the use of SES in epidemiology, Liberatoset al.^[12] stated that most of the socioeconomic status measures are based upon three related dimensions: occupation, education and income. A ranking of occupational classes is often employed because occupation is considered to be a reliable indicator of relative standing in industrial societies. It is not surprising, then, that many scales and indices for assessing SES, such as that described by Pineo et al.,^[13] rely on the social prestige of subjects' occupation as a major indicator. For studies in which detailed personal questionnaires are not available for all subjects, the accurate measurement of SES is problematic. Educational level and income are particularly difficult to ascertain in administrative or medical data sets, since such data are rarely collected. For population or administrative data in which occupation, education and income are unknown, census surveys are sometimes used, estimating the income and education of individuals on the basis of their neighbourhood average. The existence of a variety of occupational scales and other proxy measures is an indication of the extent of this problem.^[14] Socioeconomic status scale most widely used for urban population in India is the one proposed by kuppuswamy^[15] in 1976. It is based on education, occupation and income of the head of family. Main disadvantages of the Kuppuswamy scale, it primary measures the socioeconomic status of urban population. Emphasis is on professional education and occupation of the head of the family may not have the same relevance today. Thus an educated, unskilled member of the family business is likely to be in the upper low category, even though he has good standard of living and can afford good health care. It therefore does not necessarily reflect the standard of living or other human development indicators such as sanitation and health. Prasad's classification^[16] is based on per capita income of family. Pareek's scale^[17] is used for rural population. It is based upon nine items which include Caste, Occupation of head of family, Education of head of family, Level of social participation of the head of the family, Land holding, Housing, Farm power (draught animals

like bullock, prestige animals like camel, elephant, horse and mechanical power), Material possessions, Family (type of family, family size and distinctive features of family in respect of persons other than the head of family). Apart from these individual indices, Human development index (HDI) is extensively used to measure the standard of living of a country. HDI is calculated based on three indices; life expectancy to measure longevity, educational attainment to represent knowledge and real gross domestic product (GDP) to represent income. Other indices most frequently employed in research on variations in health in the other countries are the Townsend Index^[18], the Carstairs Index^[19] and the Jarman Underprivileged Areas Index (UAI)^[20]. Townsend^[18] used four indicators to assess material deprivation, namely: percentage of economically active persons who are unemployed, percentage of households with no car, percentage of households not owner-occupied and percentage of households overcrowded. Carstairs & Morris^[19] used a similar array of variables: overcrowding, no car, male unemployment and percentage of all persons in households where the head is in a semiskilled or unskilled occupation. The Jarman UAI^[20] is a more complex measure, consisting of a summation of eight weighted variables, which attempts not only to measure deprivation but also to assess levels of need for primary care and general medical practitioner workloads.

Discussion

The central question of this review is whether socioeconomic status was related to oral health. Since by definition a risk factor must clearly establish that the conditions were established that make outcome likely, longitudinal or cohort studies were necessary to demonstrate risk factors. A condition associated with an outcome in a cross sectional study can only be viewed as risk indicator. Mascernhas A K^[21], Prakash P et al^[22] reported that parent's education levels used as socioeconomic status indicators were associated with prevalence and severity of caries. Occurrence of caries was higher in children of low socioeconomic status and uneducated mothers. Other similar studies in Moradabad^[23] and Dawangere^[24] reported significant differences in mothers' caries activity, high level of S. mutans,

educational level, socioeconomic status, frequency of maternal sugar consumption, and their child's caries experience. Acharya S^[25] results demonstrated the relationship between Locus of Control and oral health, and the role of socioeconomic status having a strong bearing on this relationship.

VV Doifode et al^[26] in Nagpur India observed that dental caries was less common in lower socioeconomic strata but at the same time other disorders viz. periodontal disease, oral mucosal lesions and opacities and enamel disorders were more common in lower socioeconomic strata. Duraiswamy P et al^[27] in marble mine workers in Rajasthan observed that substantial unmet treatment needs, chiefly for caries. Sogi GM et al^[28] in Davangere India reported that dental caries experience and oral hygiene status of children were strongly correlated to socio-economic status. Jose B^[29], Kuriakose S et al^[30] in Kerala preschool children reported that groups at high risk from dental caries lesions were those belonging to a lower socioeconomic class. Retnakumari N^[31] in primary school children reported socio-economic level was negatively associated with caries status. Studies point to one thing that social class or socioeconomic status may affect caries risk in Indian population. This can be explained on the basis of factors such as low income. Low income can affect the degree of education, health, values, life styles and access to health care information, thereby increasing susceptibility to caries. Major drawback of these studies is that there was no universally accepted definition of socioeconomic status. This may be because socioeconomic status has very broad categorization. It has various components which may differ in different geographic areas. Second major drawback of these studies was all of them were cross-sectional surveys. As cross sectional survey have some inherent disadvantages. Burt^[32] reported that cross-sectional surveys underestimate the real condition due to imperfect clinical examinations. Moreover, the examiners disease detection ability is never perfect. Considering that a number of tooth sites are constantly exposed to demineralization, even the most meticulous method might give different results at different moments of the day. Studies have reported that higher frequency of periodontal diseases is not limited to subjects at the bottom of the

social hierarchy, but manifests itself as a gradient at every level of the social hierarchy. thus a direct relationship between the relative socioeconomic position of the subjects and the occurrence of periodontal diseases was observed.^{[33]-[34]}

Kumar Set al.^[35] in Kesariyaji Rajasthan reported prevalence of periodontal disease to be 98.2% in mine workers of Rajasthan. Mine workers who migrated from other states were of lowest of the socioeconomic status. Bleeding on probing and calculus was widespread in this population. Gundala R^[36] a significant decrease in periodontitis was observed as the income and education level increased.

Prabhu N et al.^[37] in Udupi Karnataka reported correlation between different socioeconomic parameters and partial edentulism. As income increases, the incidence of partial edentulism decreases. They also reported that partial edentulism is less in the employed compared to unemployed group.

Shah N et al^[38] level of edentulousness was found to be high, more so in rural than in urban people and more so in advancing age. The denture needs of the rural elderly were higher than those of the urban elderly. Shigli K et al^[39] in Belgaum Karnataka India reported that majority of the patients gave economic reasons for not replacing teeth. Cost was the main barrier for obtaining dentures.

Socioeconomic status is related to periodontal conditions and loss of teeth. Explanation of these findings is rooted in the treatment preferences of different socioeconomic status. A preference of more radical dental treatment in terms of tooth extractions could explain that missing teeth was more prevalent in disadvantaged social groups, because this was a low-cost dental treatment. In addition, the choice of radical dental treatment might also rely on past dental treatment traditions where tooth extraction was the acknowledged dental treatment procedure in case of pain or symptoms.

In India, dental visiting is still not considered a preventive dental behavior; at present it only depends on treatment needs. Thus people from lower income group fail to make prophylactic visit to a dentist thus giving them poorer dental health behavior.

Thankappan K et al.^[40] find significance of social status and tobacco use and oral cancer in Kerala India. They suggested

that since tobacco use has been reported to be higher among the poor and less educated people.

Hashibe Met.al.^[41] reported subjects with high SES index had protective odds ratio for oral premalignant lesions, Higher education and income levels were also associated with decreased risk of all four oral premalignant lesions.

Chandershekhar BR^[42], Ahmad M S et al.^[43] reported inverse relationship between oral health status and SES. The overall treatment need was more in the lower class people than in the upper class. Ramanathan^[44] also found most of the oral submucous fibrosis cases from India were also of low socioeconomic groups.

Socioeconomic status is suspected to be related to oral cancer risk, but the results from studies have been mixed. Though the mechanism for the association is not clear, SES may be associated with oral premalignant lesions because of access to medical care, health related behaviors, living environment or psychosocial factors.

Socioeconomic characteristics of the individual will be more crucial in determining visits for preventive services than visits for treatment of a strong perceived need such as a toothache. The discretionary characteristic of dental care among low socioeconomic status people or low-income persons may reflect the prioritization of needs rather than an unwillingness to seek dental care. In the presence of limited resources, dental needs have to compete with other health and survival needs. Dental care does not have a high priority in India because the consequences of delaying it usually are less severe and less expensive than the consequences of delaying most medical treatments. However, a low prioritization of dental care does not mean that there is no perception of need for dental care

Conclusion

The review showed that while many studies have looked at the relationship of socioeconomic status with oral health almost all of studies were cross sectional, which is not the ideal study design. It is well established fact that the socioeconomic position of individuals, groups, and places are defining characteristics for the levels of systematic health and disease. The effect of socioeconomic position on the occurrence and severity of ill health is not restricted to individuals and groups

characterized by absolute deprivation or poverty but shows at every level of social hierarchy generating what is known as social gradient in health.

Action to reduce oral health inequalities in India remains a major dental public health challenge. Evidence has shown that poorer oral health of lower SES groups compared with their higher social status counterparts. Recent research has highlighted a social gradient across the social hierarchy for a variety of oral health outcomes. Effective action to tackle oral health inequalities can only be developed when the underlying causes of the problem are identified and understood.

Emerging evidence is beginning to map out the social determinants of oral health inequalities. A range of complementary public health actions can be implemented at local, national or international levels to promote sustainable oral health improvements. A radical change in approach is needed. More of the same is no longer an option.

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