Association between Oral Hygiene, Socioeconomic Status and Presence of Dental Care Facilities to Devise Treatment Needs in Population

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ABSTRACT

Background: Objective: The aim of this study was to determine association between various variables such as, oral hygiene status, socioeconomic status and presence/absence of dental care facilities to devise treatment needs for the patients in Pakistani community. Study Design & Place: It is a Cross-sectional descriptive study which is completed in 1 year time, in Operative department, Lahore Medical and Dental College, Lahore. **Methods**: A total of 200 patients reporting in operative dentistry department were included in this study, information was obtained through a specifically designed proforma, which contained the basic dental odontogram, oral hygiene status, SES and the presence/absence of dental care facility. **Results**: Results of chi-square test were statistically significant (p-value <0.01), poor oral hygiene was most common in lower SES (65.8%) followed by high SES (45.5%), whereas average and good oral hygiene were common in middle SES with (44.9) and (24.6%) respectively. About (74.3%) of the people reported with poor oral hygiene, had no DCF as compared to (25.4%) of those who reported with DCF, the results were statistically significant (p-value <0.01). People with average oral hygiene and DCF accounted for (46.1%) as compared to those (53.9%) having no DCF, while (100%) of the people being reported with good oral hygiene had DCF. **Conclusion**: It was concluded that there was significant association between SES, oral hygiene status and presence/absence of dental care facilities especially in rural areas of Pakistani community.

Keywords: oral hygiene, socioeconomic status (SES), dental care facilities (DCF).

INTRODUCTION

Socioeconomic status had been a vital measure in many studies because it is so closely related with many health related characteristics.[1] Attitude towards health are often part of the set values that follows from an individual's prestige in society and may explain some of the observed differences in health between socioeconomic status groups. Socioeconomic status is inversely related to status of many diseases especially oral hygiene maintenance,[2] the reason in most cases is difficulty in accessing the health care system, ability to afford such care, time to get care, different priorities and awareness.[3] In many studies done in different parts of the world,[4,5] caries appear to be related to social class, with more population in lower class experiencing caries, and having poor oral hygiene. While in some other studies no significant difference had been found in high and low socioeconomic groups.[6]

It is a known aspect through different health measures, families with lower socioeconomic status (SES) have higher rates of diseases and disabilities such as cardiovascular disease, cancer, diabetes, and birth defects. These health inequalities originate from different factors such as health behavior since lower socioeconomic individuals have possibly more unhealthy behaviors. According to Surgeon General's Report on Oral Health 18 there are disparities in oral health, where people with lower SES are more susceptible to oral diseases such as dental caries, periodontal disease, and oral cancer. Studies indicate significant increase in the differences in the oral health status between individuals with high and low SES. There are limited evidence-based studies on measuring oral health inequalities. Most studies have only evaluated the association between lower SES and caries, without assessing the reason for such associations.[7] Therefore, it is very little known about the oral hygiene behaviors such as tooth brushing in families with different SES.[8] There is a strong need for studies to evaluate the relationship between SES and oral health for identifying particular behavioral factors associated with SES, contributing to the risk of dental caries. Thus, the present study set to describe the socioeconomic inequality associated with oral hygiene behavior among people.

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MATERIALS AND METHODS

It is Cross-sectional descriptive study which was completed in 1 year time from January, 2019 to

January, 2020 in Operative department, Lahore Medical and Dental College. A total of 200 patients reporting in operative dentistry department were included in this study, nonprobability purposive sampling was used for data collection. Children were not included in this study, medically compromised patients were also not included in this study, and third molars were also excluded. The Community Periodontal Index (CPI)[7,8] for measurement of oral hygiene status was used. Data was analyzed using SPSS version 10.0. Chi-square was used to test the association between categorical variables. Level of significance is considered 0.05

Demographic information:
Demographic information includes the age, sex, residence area, birth order, family based characteristics, family history of chronic diseases (hypertension, dyslipidemia, diabetes, and obesity), level of education and presence of dental facility

Socioeconomic status (SES):
To determine the SES of participants, the methodology approved previously in the Progress in the International Reading Literacy Study (PIRLS) was used. Using principle component analysis (PCA), education, job, possessing private car, type of home (private/rented), and having a personal computer variables were summarized under one main component, categorized into five quintiles. Through an ascending grade, the first quintile was defined as the "lowest SES" and the fifth quintile as the "highest SES" groups.

RESULTS

Out of a total of 200 patients 52.0% of the patients reported with poor oral hygiene, which accounted for the most predominant finding, followed by Average oral hygiene 38.0%. Only 10% of the patients reported with Good oral hygiene status. Percentage distribution of socioeconomic status showed 60% of the patients belonged to low socioeconomic status making the most common finding, followed closely by middle socioeconomic status 34.5%. Good socioeconomic status accounted for 5.5% of the patients seeking dental treatment. 59.5% declined the presence of any dental care facility in their closed vicinity, while 40.5% reported to have dental care facility. Results of chi-square test were statistically significant (p-value <0.01), poor oral hygiene was most common in lower SES (65.8%) followed by high SES (45.5%), whereas average and good oral hygiene were common in middle SES with (44.9) and (24.6%) respectively. About (74.3%) of the people reported with poor oral hygiene, had no DCF as compared to (25.4%) of those who reported with DCF, the results were statistically significant (p-value <0.01). People with average oral hygiene and DCF accounted for (46.1%) as compared to those (53.9%) having no DCF, while (100%) of the people being reported with good oral hygiene had DCF. The results showed significant difference (p-value <0.01), as (90.8%) of the lower SES population did not have had dental care facilities, middle SES accounted for (14.5%), while high class reported to have 100% of facilities as compared to (85.5%) of middle and only (9.2%) of lower SES.

Table 1: Association between Oral Hygiene Status with Socioeconomic Status and presence of dental facility

		Socioeconomic status						p-value
		High		Middle		Low		
		Freq.	%	Freq.	%	Freq.	%	<0.001
Oral Hygiene Status	Good	2	18.2%	17	24.6%	0	0.0%	
	Average	4	36.4%	31	44.9%	41	34.2%	
	Poor	5	45.5%	21	30.4%	79	65.8%	
Dental facility	Yes	11	100.0%	59	85.5%	11	9.2%	<0.001
	No	0	0.0%	10	14.5%	109	90.8%	

DISCUSSION

There was statistically significant difference in oral hygiene status in different socioeconomic groups. (65.8%) of the patients with poor oral hygiene belonged to lower class, followed by (45.5%) of high SES group, whereas middle class showed high percentage of average (44.9%) and good oral hygiene (24.6%). Results in this study were consistent to other reported studies.[9-11-13] In which poor oral hygiene had been associated with low SES but it also showed trend towards studies6 in which no significant difference had been found between poor and high SES, though in this study poor oral hygiene was prevalent in low SES, it was also found higher in high SES whereas middle class appeared to maintain their hygiene significantly well.

This study showed a trend towards absence of facilities in low SES. The results were statistically significant in showing that (90.8%) of the lower class had no access to dental care facility and this explained their poor oral hygiene status, as discussed above. On the other hand high SES enjoyed (100%) of facilities followed by middle SES group (85.5%), while only (9.2%) of the lower SES population reported to have facilities. Almost (100%) of population with good oral hygiene had

dental care facilities as compared to (46.1%) of average and (25.7%) of poor oral hygiene. There was statistical significant difference, as (74.3%) of the people with poor oral hygiene had no dental care facilities, followed by (53.9%) of average oral hygiene population. Relationship between Socioeconomic status and Periodontal disease have been observed; i.e., low income or low education contributes to poor periodontal disease status.[5,6] The distribution of periodontal disease within countries also differed according to race or ethnic group regarding prevalence and severity.

The current study is one of the first of its kind in evaluating the socio-economic inequality in oral health. Finally, the association between tooth brushing and socio-economic status of the study population was considered using the Oaxaca-Blinder decomposition method and well-conceptualized measures of socio-economic inequality in health. The use of measures of absolute inequality including slope index of inequality (SII), relative inequality such as concentration index (C), and regression-based rate ratios between the groups well-suited the objective of the study. The limitation was cross-sectional nature of the study; thus, a causal relationship cannot be inferred from the current findings, and longitudinal studies are required to examine the causality and clinical importance of the outcomes. In addition, the teeth could not be examined and data could not be collected regarding oral hygiene status; however, tooth brushing was used as a single marker for evaluation of oral health. Considering the factors of inequality, there was a low portion of explained factors, i.e. other socio-economic factors might have affected oral health behavior. Monitoring socio-economic inequality in health, including oral health, is considered important in formulating appropriate public policies. Population oral health policies aiming to improve the overall oral health of the population should target socio-economic inequality. Furthermore, those policies may need to be modified to suit different socio-economic groups.

CONCLUSION

Information about devising future facilities in Pakistan is being provided and there is need for future studies to be conducted in this regard. It is based on the fact that oral health status could be improved, if properly planned health care system is devised and maintained while keeping in view the requirement of both rural and urban population. There is also a need for establishment of dental care facilities and health care system so as to improve awareness of dental health in both socioeconomic strata. It is concluded that oral health status could be improved regardless of SES, if properly planned health care system is executed and maintained.[14,15-17]

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