

ORIGINAL RESEARCH

Prosthetic status and prosthetic needs in relation to socio-economic factors among the Municipal employees of Mysore city.

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Abstract:

Objective: To assess the Prosthetic status and prosthetic needs in relation to socio-economic among the Municipal employees of Mysore city.

Settings and Design: The study was cross sectional and conducted on the employees of Reader1 Mysore City Corporation.

Materials and methods: All the available employees (1187) of Mysore city Corporation during the study period were considered for the study. WHO Oral Health Assessment form (1997) and a preformed questionnaire were used to collect the required data. Modified Kuppuswamy scale with readjustment of the per capita income was used for classifying the individuals into different Socio-economic status (SES) categories. Data was collected by a single, trained and calibrated examiner (dentist) using mouth mirror and CPI probe under natural day light. Data analysis was done using SPSS windows version 10. Comparison of the prosthetic status and needs between different SES categories was done using cross tabs and contingency co-efficient. **Results:** 6.1% of the subjects in the study had prosthesis of some kind. Prosthesis of some kind was present in 24.7% of the subjects in the upper middle SES category and none of the subjects in the lower SES category had prosthesis. The prosthetic need in the study population was 45.7%. About 67.9% of the subjects in the lower SES category needed prosthesis of some kind. The prosthetic need was 52.9% in the upper lower and 6% in the upper SES category. **Conclusion:** The study found a direct relationship between socio-economic status and prosthetic status and inverse relation between socio-economic status and prosthetic need.

Key words: Socio-economic status (SES), prosthetic status, prosthetic need, awareness, Modified Kuppuswamy scale.

INTRODUCTION

Health is a common theme in most cultures and is a fundamental human right without distinction of race, religion, political belief, economic and social condition.¹ It was recognized both in developed and developing countries, that the standard of health services, the public expected was not being

provided.² There was a drastic difference in the health status of the people between developed and developing countries, between the rural and urban population, as well as between the rich and poor. This was termed as social injustice.³ Against this background, the members of world health organization in 1981, pledged themselves to an ambitious target of "Health for all by the year 2000". Health for all,

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meaning a level of health that will enable every individual to lead a socially and economically productive life.⁴ The responsibility for health, however, does not end with individual and community effort. In all civilized societies, the state assumes the responsibility for health and welfare of its citizens. The constitution of India provides that health is a state responsibility. India, as a signatory to the Alma-ata declaration, through the national health policy, approved by parliament of India in 1983, reflects the commitment of the country towards the WHO goal of health for all by 2000.⁵ Health has improved significantly over the last century, being considerably greater among the privileged population with very little among the lower class people.⁶

Oral health is always an inseparable part of general health and socio-economic status plays a vital role in determining the oral health of an individual. Several studies in the past have revealed an association between socio-economic factors and oral health.⁶⁻¹⁰ Tooth loss especially complete loss or edentulism, is the dental equivalent to death. Tooth loss often substantially reduces the quality of life.¹¹ The loss of teeth is an end product of oral disease and reflects the attitudes of the patients, the dentists in a society, the availability and accessibility of dental care as well as the prevailing philosophies of care.¹² Many studies have been conducted in the past on the influence of socio-economic factors on dental caries, periodontitis and oral cancer. But, very few studies have been done on the influence of socio-economic factors on the prosthetic status and prosthetic needs in developing countries like India. The literature on the prosthetic status and prosthetic needs of municipal employees in India is also scanty. This prompted us to take up the present study with the objective of assessing the influence of socio-economic factors on prosthetic status and prosthetic needs among the municipal employees of Mysore city.

MATERIALS AND METHODS

The study was cross sectional and ethical clearance was obtained from the college ethical committee. All the employees of Mysore City Corporation (that included the workers in the main

office and nine branch offices) who were available during the period of study, which was conducted over a period of three months were considered for the study. After obtaining permission from the commissioner of Mysore City Corporation, the employees were notified about the intent of the study as well as date and place of their examination. The study involved completion of a pre-designed and structured questionnaire. The questionnaire was framed to collect information regarding the demographic profile, educational status, income, occupation etc. The questionnaire also included multiple option questions to collect information regarding their dental visits, the reasons for the visits, the reasons for not visiting a dentist on a routine basis, awareness towards oral diseases and awareness on the provision of reimbursement for dental care. The data regarding their oral health status was obtained through direct oral examination of the study subjects using WHO oral health assessment form (Basic Oral Health Surveys, 1997)¹³ by a qualified dentist. The prosthetic status and prosthetic needs was assessed using the following criteria.

Prosthetic status

- 0- No prosthesis
- 1- Bridge
- 2- More than one bridge
- 3- Partial denture
- 4- Both bridge(s) and partial denture(s)
- 5- Full removable denture
- 9- Not recorded

Prosthetic need

- 0- No prosthesis needed
- 1- Need for one unit prosthesis
- 2- Need for multi unit prosthesis
- 3- Need for a combination of one-and/or multi unit prosthesis
- 4- Need for full prosthesis (replacement of all teeth)
- 9- Not recorded

The examination was conducted by a single, trained and calibrated examiner. The intra-examiner

agreement was found to be 99% for Prosthetic status and prosthetic needs meeting the scientific requirement for validity and reliability. The examination was conducted at the health section of the Municipal City Corporation on a foldable chair, under natural day-light, using a mouth mirror and a C.P.I. Probe. Modified Kuppuswamy scale¹⁴, with readjustment of the per capita income to suit the present levels was used for classifying the individuals into one of the five socio-economic categories. The readjustment of the per capita income in the scale was done with the expert opinion from the department of Economics and Co-operation, Manasa Gangothri, a reputed university, in Mysore, Karnataka and the concerned statistician.¹⁵ The data was entered onto a personal computer and the analysis was done using SPSS windows version 10. Quantitative data was summarized using mean and standard deviation. Qualitative data was summarized using frequencies, percentages, and ranges. The cross-tabs and contingency co-efficient was used to compare the prosthetic status and prosthetic needs in relation to socio-economic factors. The statistical significance was fixed at 0.05. Hot water sterilizer and Chemical sterilization methods (disinfection with 2.5% Glutaraldehyde for 10 -15 minutes) were employed for sterilizing the equipments.

RESULTS

A total of 1187 subjects, with 817 (68.8%) males and 370 (31.2%) females were considered for the study. The age range of the study population was 19-57 years with a mean age of 40.74 years and a standard deviation of 9.17 (Table 1 & 2).

PROSTHETIC STATUS

6.1% of the subjects in the study had prosthesis of some kind. Prosthesis of some kind was present in 24.7% of the subjects in the upper middle SES category and none of the subjects in the lower SES category had prosthesis. The prosthetic status was better in the upper middle and upper SES category compared to other SES categories. The findings were statistically significant ($P=0.000$). The results were true even when the males and females in different SES categories were compared separately (Table 3).

PROSTHETIC NEED

The prosthetic need in the study population was 45.7%. About 67.9% of the subjects in the lower SES category needed prosthesis of some kind. The prosthetic need was 52.9% in the upper lower and 6% in the upper SES category. The prosthetic need increased with decreasing Socio-economic status (SES). The findings were statistically significant ($P=0.000$). The same was observed even when the comparison was made between different SES categories in both the gender groups separately (table 4).

AWARENESS ON THE PROVISION OF REIMBURSEMENT FOR DENTAL CARE.

Mysore City Corporation has the provision for reimbursing its employees for certain dental procedures. 16.6% of the subjects in the study were aware about the provision of reimbursement for dental care. The awareness on the provision of reimbursement for dental care was 100% in the upper SES category followed by 78% in the upper middle. None of the subjects in the lower SES were aware of the provision of reimbursement for dental care. There was a direct association between the awareness about the provision of reimbursement for dental care and socio-economic status. The awareness increased with increasing socio-economic status and the findings were statistically significant even when the comparison was made between different SES categories among the two sex groups separately (table 5).

DISCUSSION:

A significantly higher percentage of subjects in the upper SES categories (17.9%) had prosthesis of some kind, compared to those in the lower SES category (0%) (Table 3). The social pressure of maintaining the esthetics and function may be the driving force that influences the subjects in the upper classes to get their missing teeth replaced. In addition to this, the attitude and awareness towards dental care, the cost of dental treatment might also be the significant factors that determine the prosthetic status in a person. Certainly, the attitude and awareness towards dental care was better among the subjects in the upper SES categories and this was

Table 1: Age distribution of the study population in different SES categories

SES categories	15-24 yrs		25-34 yrs		35-44 yrs		45-55 yrs		55 and above		Total	
	no	%	No	%	no	%	no	%	no	%	no	%
Upper	1	1.5	21	31.3	25	37.3	15	22.4	5	7.5	67	5.6
Upper Middle	8	5.3	25	16.7	59	39.3	37	24.7	21	14	150	12.6
Lower Middle	7	4.9	32	22.5	45	31.7	46	32.4	12	8.5	142	12
Upper Lower	36	4.5	158	19.8	280	35	278	34.8	48	6	800	67.4
Lower	1	3.6	11	39.3	8	28.6	7	25	1	3.6	28	2.4
Total	53	4.5	247	20.8	417	35.1	383	32.3	87	7.3	1187	100

Mean age 40.74± 9.17**Table 2: Sex distribution of the study population in different SES categories**

SES categories	Males		Females		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Upper	30	44.8	37	55.2	67	100
Upper Middle	111	74	39	26	150	100
Lower Middle	119	83.8	23	16.2	142	100
Upper Lower	543	67.9	257	32.1	800	100
Lower	14	50	14	50	28	100
Total	817	68.8	370	31.2	1187	100

Contingency co-efficient: 0.180**P value: .000 (Significant)****Table3: Prosthetic status among the males and females in different SES categories**

SES categories	Males		Females		Total (sex combined)	
	Number	Percentage	Number	Percentage	Number	Percentage
Upper	7	23.3	5	13.5	12	17.9
Upper Middle	28	25.2	9	23.1	37	24.7
Lower Middle	6	5	1	4.3	7	4.9
Upper Lower	11	2	5	1.9	16	2
Lower	0	0	0	0	0	0
Total	52	6.4	20	5.4	72	6.1

Contingency
co-efficient: 0.329
P value: .001
(Significant)

Contingency
co-efficient: 0.296
P value: .000
(significant)

Contingency
co-efficient: 0.317
P value: .000
(significant)

evident when the utilization of dental services was assessed, which was also significantly better among the subjects in the upper classes compared to those in the lower ones. The awareness on the provision of reimbursement for dental care was also better among the subjects in the upper SES category. The finding of better prosthetic status among the subjects in the upper classes may be attributed to these factors. The results of our study were in agreement with the findings of a study by Hanson B S,¹⁶ in which, he found that the percentage of subjects having the fixed bridges was significantly higher in the upper SES group (59.2%), compared to that in the lower SES group (16.7%). The studies by Eklund SA et al¹⁷ and Gilbert GA et al¹⁸ also found the prosthetic status to be better among the subjects in the upper classes as was found in our study.

A significantly higher percentage of subjects in the lower SES category (67.9%) needed prosthesis of some kind compared to those in the upper SES category (6%) (Table 4). High levels of dental diseases like dental caries and periodontitis, which are thought to be the major causes of edentulousness, were found to be more among the subjects in the lower SES categories. Along with this, the lack of perception of the fact, that the teeth are worth saving and the cost barrier, the lack of awareness on the provision of reimbursement for dental care, which in turn leads to lesser utilization of dental services would have resulted in a higher need for prosthesis among the subjects in lower classes. The findings were consistent with the results of a study by Hanson B S et al,¹⁶ who found a higher percentage of anterior open tooth spaces among the subjects in the social class III (23.8%) compared to those in social class I (14.1%). They also noticed a significantly less mean number of functioning teeth among the subjects in the social class III (13.5 ± 7.7) compared to those in the social class I (21.5 ± 6.0).

The lack of social pressure and attitude to maintain the teeth in good health may be factors responsible for lack of utilization as well as lack of awareness on the provision of reimbursement for dental care among the subjects in the lower classes. This highlights the fact that the lower class people may not utilize the services even if the cost barrier is removed.^{19, 20, 21, 22}

When applied to a practical problem such as dental programme planning, socio-economic status in effect adds a new dimension to the entire process. As an expression of attitudes, community groups particularly the underprivileged, have clear feelings about the priorities in the health care field and the way health care is rendered. They realize their lack of expertise in the technical and scientific aspects of health care, but they want a real control in matters of priority, delivery of care, and perhaps even personnel selection.²³

CONCLUSION:

The relationship between health and socio-economic status is widely recognized. This relationship is seen not only in specific occupational diseases, but also in general health of persons and families. The present study made an attempt to assess the relation between socio-economic factors and prosthetic status as well as prosthetic needs. The study found a direct relationship between socio-economic status and the percentage of subjects having prosthesis of some kind (prosthetic status), meaning; higher the socio-economic status higher was the percentage of subjects having prosthesis of some kind. An inverse relationship was noted between socio-economic status and the percentage of subjects in need of a prosthesis of some kind (prosthetic need) meaning; higher the socio-economic status, lower was the percentage of subjects in need of a prosthesis of some kind. The programmes to eliminate the socio-economic inequality in oral health should not concentrate only on the treatment aspect, as they would not accomplish the objectives in full. This socio-economic inequality exists as long as the attitude and awareness towards dental care among the subjects in the lower classes changes. To make them change their attitude towards dental care and to create awareness on dental diseases, a programme that is as comprehensive as possible, that takes into consideration the promotive, preventive, curative and rehabilitative services needs to be thought about. In all these programmes, the priority should always be given to lower class people, who have a higher level of diseases and unmet treatment needs.

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Table 4: Prosthetic needs among males and females in different SES categories

SES categories	Males		Females		Total (sex combined)	
	Number	Percentage	Number	Percentage	Number	Percentage
Upper	1	3.3	3	8.1	4	6
Upper Middle	21	12.6	10	25.6	31	20.7
Lower Middle	54	45.4	12	52.2	66	46.5
Upper Lower	291	53.6	132	51.4	423	52.9
Lower	9	64.3	10	71.4	19	67.9
Total	376	46	167	45.1	543	45.7
	Contingency co-efficient: 0.280 P value: .001 (Significant)		Contingency co-efficient: 0.293 P value: .000 (significant)		Contingency co-efficient: 0.282 P value: .000 (significant)	

Table 5: Awareness on the provision of reimbursement for dental care, among males and females in different SES categories

SES categories	Males		Females		Total (sex combined)	
	Number	Percentage	Number	Percentage	Number	Percentage
Upper	30	100	37	100	67	100
Upper Middle	85	76.6	32	82.1	117	78
Lower Middle	10	8.4	0	0	10	7
Upper Lower	2	0.4	1	0.4	3	0.4
Lower	0	0	0	0	0	0
Total	127	15.5	70	18.9	197	16.6
	Contingency co-efficient: 0.644 P value: .000 (Highly Significant)		Contingency co-efficient: 0.684 P value: .000 (Highly Significant)		Contingency co-efficient: 0.659 P value: .000 (Highly Significant)	