

Barriers to the utilization of dental services in Shimla, India

Shailee Fotedar, K. R. Sharma¹, Vinay Bhardwaj, G. M. Sogi²

Departments of Public Health Dentistry, ¹Pedodontics and Preventive Dentistry, HP Government College, Shimla, Himachal Pradesh, ²M.M. College of Dental Sciences and Research, Mullana, Ambala, Haryana, India

Address for correspondence:

Dr. Fotedar Shailee,
HP Government Dental College
and Hospital, Shimla,
Himachal Pradesh, India.
E-mail: drfotedar@rediffmail.com

ABSTRACT

Objective: The objective of this study was to determine the barriers to regular dental attendance for check-up in a rural population in Shimla Himachal Pradesh. **Materials and Methods:** A cross-sectional questionnaire survey was conducted among 319 adults in the area of Thari Panchayat, Shogi, Shimla. The data was analyzed by SPSS version 13. Statistical tests used were chi square and multiple-variate analysis. **Results:** The response rate of the study was 96.8%. 46 (15.1%) visited a dentist within the previous one year. The most common reasons for the last dental visit were pain or a dental emergency (208, 68.5%). The most commonly reported reason for not seeking dental care was "no need to visit a dentist unless there is pain" by 190 (62.5%) in bivariate analysis as well as in multiple logistic regression analysis (Odds ratio: 1.95; CI: 1.71-2.22). **Conclusion:** Our findings suggest that only a small portion of population visited dentist in previous one year. They believe that visiting a dentist is necessary only for pain relief. Thus it is important to give them awareness programmes about the good oral health and motivating them to use the services available.

Key words

Barriers, dental health services, socioeconomic factors, utilization of dental services

INTRODUCTION

The dental health of the general population in developed countries has improved over the past four decades, but people from developing countries continue to have high levels of dental disease. Evidence shows suboptimal utilization of dental services has been repeatedly reported for population from developing countries.^[1] In many countries, comprehensive national dental care systems have succeeded in increasing the coverage and reducing or even eliminating socioeconomic differences in the use of dental services. However, socioeconomic differences in the utilization of dental services still exist in many countries.^[2-7] There are also other barriers to seeking regular dental care, including availability of dental services,^[8,9] dental fear,^[10-12] cost, income the distance a person had to travel to get care and preference for preservation of teeth.

Utilization is the actual attendance by the members of the public at health care facilities to receive care.

Utilization, which measures the number of visits per year or the number of people with at least one visit during the previous year,^[5] serves as an important tool for oral health policy decision-making.^[13] Barriers to seeking dental services have been classified by the Federation Dentaire Internationale as related to: (a) individuals themselves (such as lack of perceived need, anxiety or fear, financial considerations and lack of access), (b) the dental profession (inappropriate manpower resources, uneven geographical distribution, training in-appropriate to changing needs and demands and insufficient sensitivity to patient's attitudes and needs), and (c) society (insufficient public support of attitudes conducive to health, inadequate oral health care facilities, inadequate oral health manpower planning and insufficient support for research).^[14]

India is one of the largest democracies in the world, with a population of over one billion. It is a rapidly developing nation and is making great progress in IT, finance and living standard. In spite of these, it is very sad to know that very few people believe in regular dental care. In Himachal Pradesh, India, the dental care services are mostly through government services and are free of cost or at a very nominal cost. As there are no preventive care policies and recall systems for regular checkups, the traditional dental care is treatment oriented. Use of dental services is more discretionary than use of either physician or hospital services because oral conditions are not life threatening.^[15] Whether reasons for this are due

Access this article online	
Quick Response Code:	Website: www.ejgd.org
	DOI: 10.4103/2278-9626.112314

to patient-related or dental service availability-related factors has not been determined.

So, the present study was conducted with the aim to determine the barriers that prevent regular dental care or attendance for dental check-ups in a rural population in Shimla, Himachal Pradesh.

MATERIALS AND METHODS

A cross-sectional questionnaire survey was conducted among 319 adults in the area of Thari Panchayat, Shogi, Shimla, Himachal Pradesh during the month of October, 2012. The population of the Thari Panchayat is 3220. The area consisted of 503 houses as stated in voter's list provided by the Gram Panchayat. Random sampling was done and 150 houses were selected. The questionnaires were distributed to 319 adults above 18 years residing in the selected house to assess their dental utilization behavior. Young and middle aged individuals were preferred in order to obtain a homogeneous population and to minimize the number of patients with full dentures. The questionnaires were collected after one week. A total of 309 questionnaires were received from 150 houses.

Ethical approval to conduct the study was obtained from the Institutional Review Board of H.P. Government Dental College and Hospital, Shimla. The questionnaire used was in local language. A pilot study was undertaken on 30 persons to pre-test the questionnaire in order to ensure that people can understand the questions and answer them without any help.

The questionnaire addressed the following aspects: Socio demographic characteristics such as age, gender and marital status, level of education, income, information on Oral hygiene practices, the time and reason for their last dental visit. In the last part of the questionnaire, subjects were asked which of the following reasons prevented them from visiting the dentist: Lack of time, dental fear or anxiety, believing there is no need to visit unless they were experiencing pain, the dentist is at a long distance, dental treatment is expensive or believing that dental diseases are serious. A space was also provided for listing other reasons not included in the choices.

Educational background of the individuals was as follows; basic education: Primary, middle and higher school education while further educational group included the graduate and postgraduate education. Income was classified on the basis of the Kuppuswamy's socioeconomic status scale.^[16]

Statistical Package for social sciences (SPSS Inc., Chicago, IL, version 13 for windows) was used to analyze the data. Statistical test was used chi square test. Multiple logistic regression analysis was performed to identify factors

independently associated with not having a dental visit in past 1 year. The significance level used was $P < 0.05$.

RESULTS

A total of 309 questionnaires were collected back which means the response rate was 96.8%. Out of 309 received questionnaires, 304 were complete and were used in the analysis. The mean age of the study participants was 32.6 ± 7 years (range: 25-45); male 162 (53.2%); female 142 (46.8%), and the majority were married (204, 67.1%). Males were significantly older (34.6 vs. 30.6 years; $P < 0.001$), while the proportion of married individuals was similar in males and females (73.4 vs. 71.1% , respectively). Socio-economic status as determined by Kuppuswamy's scale showed 31.7% belonged to lower, 59.4% to middle and 8.9% to upper [Table 1].

Self-reported oral hygiene habits and a history of dental visits are presented in Table 2. Overall, 277 (91.4%) subjects used tooth brush to clean their teeth followed by tree stick 15 (4.9%) and finger in 12 (3.7%). Out of those who used tooth brush, 199 (71.6%) used to brush once a day and 78 (28.4%) used to brush twice a day. Females had significantly higher frequency of brushing twice than males.

Of the respondents, 46 (15.1%) visited a dentist within the previous one year, 99 (32.6%) between 1-2 years and 159 (52.3%) more than 2 years ago. The most common reported reasons for the last dental visit were pain or a dental emergency (208, 68.5%), followed by restorative treatment (62, 20.4%) and other reasons by (34, 11.1%) [Table 2].

Table 1: Distribution of study subjects regarding sex, age, last dental visit, education and income

Variables	Number	Percentage
Age		
25-35 yrs	178	58.5
36-45 yrs	126	41.5
Total	304	100
Gender		
Male	162	53.2
Female	142	46.8
Total	304	100
Education		
Basic education	198	65.3
Further education	106	34.7
Total	304	100
Income		
I (low)	96	31.7
II (moderate)	181	59.4
III (high)	27	8.9
Total	304	100

The most commonly reported reason for not seeking dental care was no need to visit a dentist unless there is pain by 190 (62.5%) subjects, and no gender difference was seen for this statement. The second and third most common reasons were: Their belief that dental diseases are not very serious by 158 (51.9%) and lack of time by 120 (39.3%) which was more commonly reported by males ($P>0.05$). Dental fear was reported by 96 (31.5%) of subjects and was more commonly reported by females than males ($P>0.001$). Other less commonly reported reasons were the long distance of the dentist and the high cost of dental treatment [Table 3].

Results of logistic regression analysis showed that the strongest factors for not visiting dentist were, belief that there is no need unless pain was present (Odds ratio: 1.95; Confidence Interval: 1.71-2.22), lack of time (1.64; 1.39-1.89), fear of dental procedures (1.51; 1.27-1.78). Dental diseases are not very serious was considered the second most common barrier in bivariate analysis, however in multivariate analysis it lost its association. Also older respondents (35-45 years), female gender, and those having only basic education were less likely to visit a dentist in the previous one year [Table 4].

In this study, out of 62.5% of the population who reported that there is no need to visit a dentist unless there is pain, 73.4% were with basic education as compared to 26.6% who had higher education with a highly significant P value of less than 0.05. In addition, it was found that the long distance of the dentist was less restrictive among the younger age group (25-35 yrs), higher education group and the high socio economic group ($P<0.05$).

DISCUSSION

Epidemiological studies have shown that despite the pervasive need for treatment, less than half the adult population visits the dentist in a year.^[17] About 36% of the general population visit dentists during any one year period. A smaller percentage of them visit twice yearly.^[18] In the present study, the younger age group visited the dentist more regularly in comparison to the older age group which was similar to the findings reported by Syrjala *et al.*^[19] which may be due to the fact that the younger age group had more knowledge and fewer barriers. Syrjala *et al.* also found that the older age group did not think that oral health was important which may be true for the older group in our study as well. However, Kelly M^[4] and Locker D^[20] in U.K and Canada reported that older dentate adults were more likely to attend a dentist on a regular basis than the younger ones.

Tooth brushing is a health behaviour, which indicates oral health attitudes. The present study shows that only 25% of the subjects used to brush twice daily. Also the number of subjects having a dental visit in the past year was 15.1%. The positive association between tooth

Table 2: Oral hygiene practices and dental visit history

Variable	Number	Percent
Cleaning aid		
Tooth brush	277	91.4
Finger	12	3.7
Tree stick	15	4.9
Frequency of tooth brushing		
Once a day	199	71.6
Twice a day	78	28.4
Last dental visit		
Less than 1 year	46	15.1
1-2 years	99	32.6
More than 2 years	159	52.3
Reason for last dental visit		
Pain/emergency	208	68.5
Restorative treatment	62	20.4
Other reasons	34	11.1

Table 3: Reasons for not visiting the dentist

Reason	Number	Percent
Lack of time	120	39.3
Dental treatment is expensive	32	10.6
Not needed unless have pain	190	62.5
I have fear of dental procedures	96	31.5
The dentist is at along distance	150	49.3
I do not think dental diseases are very serious	188	61.8

Table 4: Regression analysis of factors associated with not having a dental visit for more than one year

Variable	OR	CI	P value
Age			
25-35 years	1.00	1.18-1.68	0.002
35-45 years	1.43		
Gender			
Male	1.00	1.14-1.64	0.045
Female	1.39		
Education			
College education	1.00	1.22-1.72	0.005
High school or less	1.47		
Socio economic status			
Low	1.00	1.01-1.67	0.021
High	1.21		
Lack of time			
Yes	1.00	1.39-1.89	<0.001
No	1.64		
No need unless have pain			
No	1.00	1.71-2.22	<0.001
Yes	1.95		
Fear of dental procedures			
No	1.00	1.27-1.78	<0.001
Yes	1.51		

OR – Adjusted odds ratio; CI – 95% confidence interval

brushing frequency and utilization of dental services was also supported by Suominen-Taipale *et al.* The frequency

of brushing twice was significantly higher in females than males which is a universal phenomenon and has also been reported by Behbehani JM^[21] and Al-Hussaini^[22]

Reasons pertaining to the individuals concerned were the most significant barriers for not visiting the dentist. "There is no need unless pain was present" was considered the most common barrier in bivariate analysis as well in the multivariate analysis. So, we can say that the patient's perceived need to visit a dentist was only if they had symptoms such as pain and emergency as can be seen from the present study. This suggests that they are not aware about the maintenance of good oral health and regular visits to a dentist. They also believe that dental diseases are not serious as reported by over half of the population. So, there is a need for increasing awareness and encouraging more positive attitudes towards oral health in the same population.

Fear of dental procedures was another factor for not visiting the dentist in the present study. Here females showed higher dental fear which was also seen in other studies by Fukai *et al.*^[23] Liddell and Locker,^[24] Skaret,^[11] Moore R^[25] and Holtzmnz JM.^[26] This may be one of the reasons of dental visit being lower in females in the present study in comparison with the male population. Unlike other studies by Heloe *et al.*^[27] and Pizarro *et al.*,^[28] where even though dental fear was more common in females, they utilized dental services more frequently than males possibly due to the fact that females have greater tendency to expect good outcome from dental attendance.

Lack of time was also reported as a barrier for not visiting a dentist in this study which was also reported by Al Shammeri^[29] and Sijan Poudyal.^[30]

Higher education group showed higher dental visits than the lower education group in this study because the education may be correlated with high health consciousness, which in turn stimulates preventive behaviour such as regular visits for a check-up.^[31]

As noted above, financial reasons were not considered as an individual barrier by respondents, probably because dental care is provided free of charge here or at a minimal cost through government health services. This is contradictory to the situation in most of the countries worldwide. For example, in the USA, those who had annual incomes of more than USD 80,000 were reported (in 2005) to have regular dental visits 4.5 times more often than those having annual incomes of less than USD 20,000.^[12]

While our study provides important information, there are some limitations. The utilization of health services is assessed by means of self-reporting, which could affect the validity of the information as the respondents may have difficulty recalling exact attendance. Studies

of the frequency of dental visits are mostly based on self-reporting, and although individuals can overestimate actual consumption. But according to Gilbert *et al.*^[32] this method is sufficiently valid for most important research questions.

CONCLUSION

From the responses received from adult population in Thari Panchayat, Shimla in Himachal Pradesh, the following conclusions can be reached for this group:

Only 15% of the population reported of having a dental visit in previous one year. The highly reported reason for not visiting a dentist in this study was "Not needed unless have pain" indicating the low felt need of the people. Thus, it becomes important to make them aware by educating them about the good oral health and motivating them to use the services available for them so that they can lead overall healthy life.

REFERENCES

1. Warren JJ, Weber-Gasparoni K, Marshall TA, Drake DR, Dehkorki-Vakil F, Dawson DV, *et al.* A longitudinal study of dental caries risk among very young low SES children. *Community Dent Oral Epidemiol* 2009;37:116-22.
2. Hawley GM, Holloway PJ. Factors affecting dental attendance among school leavers and young workers in Greater Manchester. *Community Dent Health* 1992;9:283-7.
3. Nyssonson V. Use of oral health services and adult oral health in Finland. *Proc Finn Dent Soc* 1992;88:33-8.
4. Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, *et al.* Adult Dental Health Survey: Oral Health in the United Kingdom 1998. London: The Stationery Office; 2000.
5. Manski RJ, Moeller JF. Use of dental services: An analysis of visits, procedures and providers, 1996. *J Am Dent Assoc* 2002;133:167-75.
6. Petersen PE, Kjoller M, Christensen LB, Krustup U. Changing dentate status of adults, use of dental health services, and achievement of national dental health goals in Denmark by the year 2000. *J Public Health Dent* 2004;64:127-35.
7. Stahlacke K, Soderfeld B, Unell L, Halling A, Axtelius B. Changes over 5 years of utilization of dental care by a Swedish age cohort. *Community Dent Oral Epidemiol* 2005;33:64-73.
8. Penchansky R, Thomas JW. The concept of access: Definitions and relationship to consumer satisfaction. *Med Care* 1981;19:127-40.
9. Heaton LJ, Smith TA, Raybould TP. Factors influencing use of dental services in rural and urban communities: Considerations for practitioners in underserved areas. *J Dent Educ* 2004;68:1081-9.
10. Freeman R, editor. *The Psychology of Dental Patient Care: A Common-Sense Approach*. London: British Dental Association; 2000. p. 47-54.
11. Skaret E, Raadal M, Kvale G, Berg E. Genderbased differences in factors related to nonutilization of dental care in young Norwegians: A longitudinal study. *Eur J Oral Sci* 2003;111:377-82.
12. Sohn W, Ismail AI. Regular dental visits and dental anxiety in an adult dentate population. *J Am Dent Assoc* 2005;136:58-66.
13. Maserejian NN, Trachtenberg F, Link C, Tavares M. Underutilization of dental care when it is freely available: A prospective study of the New England children's amalgam trial. *J Public Health Dent* 2008;68:139-48.

14. Cohen LK. Converting unmet need for care to effective demand. *Int Dent J* 1987;37:114-6.
15. Gupta JP, Sood AK. *Contemporary Public Health: Planning Policy Management*. 1st ed. New Delhi: Apothecaries Foundation; 2005. p. 1-10.
16. Mishra D, Singh HP. Kuppuswamy's socioeconomic status scale - A revision. *Indian J Pediatr* 2003;70:273-4.
17. Reisine S. A path analysis of the utilization of dental services. *Community Dent Oral Epidemiol* 1987;15:119-24.
18. Kegeles SS. Some motives for seeking preventive dental care. *J Am Dent Assoc* 1963;67:90-8.
19. Syrjala AH, Knuuttila ML, Syrjala LK. Reasons preventing regular dental care. *Community Dent Oral Epidemiol* 1992;20:10-4.
20. Locker D, Leake JL, Main PA, Hicks T, Hamilton M. Utilization of dental services by older adults in four Ontario communities. *J Can Dent Assoc* 1991;57:879-86.
21. Behbehani JM, Scheutz F. Oral health in Kuwait. *Int Dent J* 2004;54:401-22.
22. Behbehani JM, Shah NM. Oral health in Kuwait before the Gulf War. *Med Princ Pract* 2002;11:36-43.
23. Fukai K, Takaesu Y, Maki Y. Gender differences in oral health behavior and general health habits in an adult population. *Bull Tokyo Dent Coll* 1999;40:187-93.
24. Liddell A, Locker D. Gender and age differences in attitudes to dental pain and dental control. *Community Dent Oral Epidemiol* 1997;25:314-8.
25. Moore R, Birn H, Kirkegaard E, Brodsgaard I, Scheutz F. Prevalence and characteristics of dental anxiety in Danish adults. *Community Dent Oral Epidemiol* 1993;21:292-6.
26. Holtzman JM, Berg RG, Mann J, Berkey DB. The relationship of age and gender to fear and anxiety in response to dental care. *Spec Care Dent* 1997;17:82-7.27.
27. Heloe LA, Aaro LE, Soggard AJ. Dental health practices in Norwegian adults. *Community Dent Oral Epidemiol* 1982;10:308-12.
28. Pizarro V, Ferrer M, Domingo-Salvany A, Benach J, Borrell C, Pont A, *et al.* The utilization of dental care services according to health insurance coverage in Catalonia (Spain). *Community Dent Oral Epidemiol* 2009;37:78-84.
29. Al-Shammari KF, Al-Ansari JM, Al-Khabbaz AK, Honkala S. Barriers to seeking preventive dental care by Kuwaiti adults. *Med Princ Pract* 2007;16:413-9.
30. Poudyal S, Roa A, Shenoy R, Priya H. Utilization of dental services in field practice area in Mangalore, Karnataka. *Indian J Community Med* 2010;35:424-5.
31. Álvarez B, Delgado M. Goodness-of-fit techniques for count data models: An application to the demand for dental care in Spain. *Empir Econ* 2002;27:543-67.
32. Gilbert GH, Rose JS, Shelton BJ. A prospective study of the validity of data on self-reported dental visits. *Community Dent Oral Epidemiol* 2002;30:352-62.

How to cite this article: Fotedar S, Sharma KR, Bhardwaj V, Sogi GM. Barriers to the utilization of dental services in Shimla, India. *Eur J Gen Dent* 2013;2:139-43.

Source of Support: Nil, **Conflict of Interest:** None declared.

Staying in touch with the journal

1) Table of Contents (TOC) email alert

Receive an email alert containing the TOC when a new complete issue of the journal is made available online. To register for TOC alerts go to www.ejgd.org/signup.asp.

2) RSS feeds

Really Simple Syndication (RSS) helps you to get alerts on new publication right on your desktop without going to the journal's website. You need a software (e.g. RSSReader, Feed Demon, FeedReader, My Yahoo!, NewsGator and NewzCrawler) to get advantage of this tool. RSS feeds can also be read through FireFox or Microsoft Outlook 2007. Once any of these small (and mostly free) software is installed, add www.ejgd.org/rssfeed.asp as one of the feeds.