

ACCESSIBILITY TO DENTAL SERVICES AND FREQUENCY OF DENTAL VISITS AS A FACTOR FOR NON-REPLACEMENT OF MISSING TEETH IN PARTIALLY DENTATE PATIENTS REPORTING FOR DENTAL EXTRACTION

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Abstract

Objective: To determine the frequency of dental visits and utilization of dental services among partially dentate patients reporting for dental extraction.

Materials & Methods: A cross-sectional study was conducted on 225 patients at the out-patient department Khyber College of Dentistry, Peshawar started from January 2013 to February 2015 by using consecutive non-probability sampling. Data was collected from patients having prosthetically un-restored partially edentulous areas in mouth for a minimum of one year and reporting for dental extraction. However this study excluded those patients having history of fixed or removable prostheses. Areas regarding frequency of dental visits and utilization of dental services were addressed. All data was analyzed using SPSS 20.

Results: Out of 225 patients, females (n=137, 60.9%) reported more than males (n=88, 39.1%). The mean age recorded was 41.5 ± 11.65 (SD). Majority of the subjects (75.6%, n=170) found it easy to access the dental services and utilization and were aware of the available dental services in government clinics in n=171, 76% of the cases. Similarly, 89.7% (n=202) reported to have visited a dentist either to nearby government clinics or other dental healthcare facilities with n=91 (40.4%) of the subjects reported their visit for more than five years. Those who had reported more than five years ago had the highest number of missing teeth and un-restored edentulous spaces (n=71, 35.1%).

Conclusions: The results of our study demonstrate that frequency of dental visits is strongly related to the number of missing teeth. Initiatives should be aimed towards improvement of dental services utilization and accessibility of dental and prosthodontic treatment. Effective use of dental services will require efforts to be taken at the patient, dentist and government level.

Key Words: Service Utilization, Visits, Partially edentulous, Dental extraction.

Introduction

In order to analyze dental care utilization, Medical Expenditure Panel Survey (MEPS), the National Health and Nutrition Examination Survey (NHANES) and the National Health Interview Survey (NHIS) are the main nationally representatives data sources. The adaptation of dental services of the Andersen's 'Behavioural Model of Health Services Utilization' by Kyak includes predisposing and enabling determinants. Demographic factors, social factors (marital status, education, occupational status or social network), frequency and attitudes of general and oral health and social services are predisposing characteristics. Enabling determinants such as health insurance coverage, income and access related to transportation and information are factors

which affect individual's ability to access the healthcare system.^{1,2}

The proportion of a population with a dental visit each year or specified periods of time is regarded as one of the most important measures for predicting dental care utilization.^{3,4,5} The Scientific Basis of Dental Health Education advocates that the patient must have dental attendance at least a visit per year. However, for the preventive approach to dental care, a six monthly examination is recommended as was suggested by Elderton in 1985.⁶

Dental services utilization decreases with age, with the highest utilization recorded for middle age group and then declining dramatically by the age of 65. Women use dental services more often than males by reporting a dental visit within the past year as compared to males and were more likely to wear dentures.^{7,8} However, higher utilization does not necessarily lead to better oral hygiene as the Danes had poorer dental conditions than the Swedes despite the fact that 77% of the study sample of Danes visited dentist twice a year as compared to Swedes (28%).³ Broadly, access to dental care

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must take into account both the availability of dental care and the willingness/motivation of the patient to seek that care and is mainly influenced by the facilitators and barriers to care.^{9, 10}

The conclusion of a study in Istanbul by Ozkan et al was that 26% of the subjects reported a dental visit within the previous year and 41% reported within the last 5-10 years which was mainly attributed to cost.¹¹ Similarly 69% of the subjects had visited their dentist last time for more than six years.¹²

A study by Patil et al in India highlighted that due to lack of awareness, inaccessibility or unavailability of dental services, 65% of the patients never visited a dentist in their life time. Patients who visited dentist more frequently had fewer missing teeth, as only 7.9% of the patients who visited dentist once every 2 years, 11.6% for those who visited every 2-5 years and 26.3% for those who visited a dentist more than 5 years ago, had more than 5 teeth missing.¹³

Kakatkar et al in India and Saddki et al in Malaysia found out that the distance a person had to travel in getting dental care influenced the visit as 72.6% of the patients found it easy to visit the nearest dental clinic while 6.4% found the visit to be very difficult. Most of the patients (69.4%) have good knowledge of the dental services in government setups whereas 30.6% didn't know them at all.^{14,15}

The objective of this study is to assess the frequency of dental visits and dental care accessibility in partially dentate patients reporting for dental extraction. Research in this area is important to health professionals and policymakers, advocating or modifying existing policies and programs targeting at-risk subgroups and remove barriers to accessing oral health care.

Materials and Methods

A cross-sectional study was carried out in dental out-patient department, Khyber College of Dentistry, Peshawar over a period of 19 Months i.e., January 2013- February 2015. Data was collected from two hundred and twenty five patients including both genders with age ranging from 20-60 years, having prosthetically un-restored partially edentulous areas in mouth for a minimum of one year and reporting for dental extraction. However this study excluded those patients having history of fixed or removable prostheses and patients with cognitive impairment, reduced intelligence and uncooperative behavior.

Intra oral examination was carried out and number of missing teeth recorded. For the purpose of this study, dental services and utilization was categorized as easy or difficult for the patient depending on the accessibility (distance). If the distance between the home of the patient and local dental services of a government set-up establishing "proximity" was more than 5 kilometers, patient had difficulty in gaining access to dental services. If it was less than or equal to 5 kilometers, the access was termed as easy. If the patient had ever visited a dentist then frequency of dental visits was categorized as less than 2 years, visit to a dentist in 2-5 years and a dental visit more than 5 years ago. Any knowledge about available dental services in government clinics was noted as 'Yes' or 'No'.

All data was analyzed using SPSS version 20. Frequencies and percentages of all the variables were noted. The relationship of frequency of dental visits to the number of missing teeth was noted by chi-square test. All data is presented in tabulated form.

Results

There were 88 (39.1%) males and 137 (60.9%) females with age ranging from 20-60 years. The mean age recorded was 41.5 ± 11.65 (SD) years.

Out of 225 subjects, 24.4% (55) of the subjects found out to have difficulty in accessing to dental services and utilization. The other 75.6% (170) of the subjects found it to be easy. A no visit to a dentist by the patient in their lifetime was reported in 10.2% (23) of the subjects while 89.7% (202) visited a dentist either to nearby government clinics or other dental healthcare facilities.

Only 24% (54) of the subjects did not know about the available dental services in nearby government clinics whereas majority of subjects (n=171, 76%) were aware of the available dental services in government clinics. The p-value recorded was 0.102 which was non-significant.

One to eight number of teeth were missing in 173 (76.9%) of the patients, 9-16 missing teeth was reported in 30 (13.3%) patients, 16-24 teeth missing in 21 (9.3%) cases and only 1 (0.4%) patient had 25-32 number of missing teeth.

Table- 1: Relationship of age with frequency of dental visits

Age	No Visit	Patient reporting a visit		
		<2 years	2-5 years	>5 years
20-30	4 (1.8 %)	20 (8.9 %)	14 (6.2 %)	17 (7.55 %)
31-40	5 (2.2 %)	17 (7.6 %)	14 (6.2 %)	26 (11.55 %)
41-50	7 (3.1 %)	14 (6.2 %)	14 (6.2 %)	23 (10.2 %)
51-60	7 (3.1 %)	7 (3.1 %)	11 (5.0 %)	25 (11.1 %)
Total	23 (10.2%)	58 (25.8%)	53 (23.6%)	91 (40.4%)

p-value for frequency of dental visit was 0.399 NS

Table- 2: Relationship of gender with frequency of dental visits

Gender	No Visit	Patient reporting a visit		
		<2 years	2-5 years	>5 years
Male	14 (6.2%)	14 (6.2%)	23 (10.2%)	37 (16.4 %)
Female	9 (4%)	44 (19.6%)	30 (13.4%)	54 (24%)
Total	23 (10.2%)	58 (25.8%)	53 (23.6%)	91 (40.4%)

Table-3: Frequency of dental visits

Frequency of visit	N (%)
< 2 years	58 (25.8%)
2-5 years	53 (23.6%)
>5 years	91(40.4%)
Total	202 (89.8%)

Table-4: Relationship of frequency of dental visit to the number of missing teeth.

Frequency of visit	Number of missing teeth			
	1-8 N (%)	9-16 N (%)	17-24 N (%)	25-32 N (%)
< 2 years	46 (22.7%)	7 (3.4%)	4 (1.9%)	1 (0.4%)
2-5 years	40 (19.8%)	8 (3.9%)	5 (2.4%)	0 (0%)
>5 years	71 (35.1%)	12 (5.9%)	8 (3.9%)	0 (0%)
Total	157 (77.7%)	27 (13.3%)	17 (8.4%)	1 (0.4%)

N= 202/225 (with the 23 patients reportedly not having a dental visit in the past)

Discussion

The results of our study showed that despite of being aware of the available dental services and the easy accessibility of the patients to dental and prosthodontic treatment, most of the subjects had previously un-restored edentulous spaces. This means that factors other than dental services utilization are responsible for non-treatment of partial edentulism which must be investigated in future studies.

In our study the younger age group had more dental visits in the past two years in comparison to the older age group. Our study was similar to the one in India by Kakatkar et al which showed that younger age group had more knowledge and fewer barriers and they regard oral health to be important and report more frequently as compared to the older ones.¹⁴ As compared to 66.6% annual visits for males in 1995, females self-reported a 70.1% annual visit in the same year.⁷

A study in US by Akinkugbe and Lucas showed that 68.6% reported a dental visit in the past one year and 7.5% reported their last dental visit as greater than 2 years but less than 5 years for the year 1995.¹ This was in contrast to our study which showed that 25.8% (58) of the subjects consulted a dentist in the past 2 year period, 23.6% (53) in the past 2-5 years and 40.4% (91) reported visiting a dentist for more than 5 years ago. Kakatkar et al in India reported the dental visit of the subjects within 1 year to be 4 %, between 1-2 years 47.5% and over 2 years 48.5% 14 which was much similar to the

results of our study.

Studies in Nigeria by Ajayi et al and Gambhir et al in India shows that 27.3% and 30% of the patients never visited the dentist respectively.^{9,16} Only 55.8% reported visiting a dentist when in pain. Twice a year visit was reported in only 9% of the patients, 7.3% visited once a year and 0.8% once in two years.⁹ This was in contrast to our study where only 10.7% had never visited a dentist.

A study by Kengne et al in Belgium showed that in the twelve months period, 49.7% did not visit a dentist. The author attributes it to the structural and social barriers like insufficient government program administrative costs, supply issues, lack of awareness of the need for care and costs.¹⁷ A Swedish study by Mohlin et al showed that the proportion of patients who visit a dentist once a year increased during the last decade from 43% to 70% with marked improvement in dental status. The author attributes it to the good utilization of dental services by the patient since 41.9% of the Swedish men visit a dentist at least once a year and 28% after every six months.¹⁸

It was noted by Marin et al in Buenos Aires that the level of consultation/visit to the dentist is not affected by proximity or remoteness of the house or health care facilities and there is no such relationship between the two.¹⁹ This was much similar to the results of our study which showed that 75.6% of the subjects found the dental visit to be easy but still most of the patients reported their dental visit for more than

five years (40.4%).

A study in India by Gambhir et al showed that 80% of the subjects reported availability of dental services in their area, most of which were provided by the private sector.¹⁶ In our study the percentage is a bit lower with 76% of the subjects knowing that dental services are being provided at government set-ups. The reason for this is that in our study the focus was mainly on the government set-ups and not the private sector which would have affected the present percentage.

A study in Iraq by Moutlak concluded that in spite of the services of ministry of health, prosthodontic clinics and colleges of dentistry, it seemed that they were not enough to meet the population needs.⁸

A key barrier to the utilization of dental services identified was the availability or lack of dental services. Others include cultural and social influences, socio-economic status, the attitudes of the patient, dental attendance and awareness of the patient, treatment received in the past, dental fear and anxiety, time constraints and dissatisfaction with the quality of oral health care systems and lack of resources including the cost of dental treatment, the availability and accessibility of dental services to the patient. Also the adequacy of dental work force, perceived need for care, preventive strategies, transportation difficulties and psychosocial factors were also regarded as a reason for non-compliance with treatment.^{20,21,22} All of these areas must be addressed in future to ensure dental and prosthodontic treatment available to all.

A limitation of our study is the lack of information concerning the dental visits to the private sector in addition to the small sample size and localization of the study to a particular area. Therefore further investigation regarding the effects of other barriers to prosthodontic and dental care is required.

Conclusion

In the light of this study it was concluded that despite of the easy accessibility of patients to dental care in their proximities still they didn't visited the dentists frequently.

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