

# Barriers in Access and Utilization of Dental Care: Assessment and Recommendations Using Delphi Technique



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**OBJECTIVE:** Prompt access to oral health care is one of the key factors in maintaining oral health thus providing a gateway to person's wellbeing. Access to dental care is the ability to obtain and make use of dental services. There is considerably lack of evidence in Pakistan therefore the aim of this study is to assess the barriers in access and utilization of dental care services in urban setting of Karachi among general population and proposition of recommendations using Delphi-technique. **METHODOLOGY:** It was mixed methods study design conducted from December 2017- March 2018. At first stage, cross-sectional study design was used for assessing the barriers by administering semi-structured questionnaire. The multi-stage random sampling technique used to reached the targeted sample n=535 in two towns of Karachi. In second stage, panel of experts proposed the recommendations using Delphi-technique. Data was analyzed using SPSS 21.0. Mean and standard deviations applied for demographics. Descriptive statistics determined the proportion distribution of respondents among of barriers. Pearson Chi-square test and One-way ANOVA employed for determining significance difference among barriers and demographic variables.

**RESULTS:** Mean age of participants was 30.6 years [SD= 12.3]. Only 14 (2.6%) have access to dental services without any identified barrier and 43 (8%) never visited any dentist. Major barriers were financial cost 166 (31.1%) and patient related barrier 169 (31.5%) followed by dentist related barriers 125 (23.4%). Social barrier was accounted by 18 (3.4%) participants. There was no significant difference of gender (p-value 0.34), age groups (p-value 0.06) and barriers.

**CONCLUSION:** It is concluded and recommended that robust advocacy and policies should be formulated to include dental services in primary health care delivery system of Pakistan to provide services at affordable cost. Dental health awareness programs should be conducted on regular basis addressing masses to remove patient and social related barriers.

**KEY WORDS:** Barriers in dental care, Access to dental care, Utilization of dental care, Delphi-technique in dentistry.

**HOW TO CITE:** Ahmed W, Bukhari SF, Aslam M, Irfan F, Fatima R, Ali M. Barriers in access and utilization of dental care: assessment and recommendations using delphi technique. J Pak Dent Assoc 2019;28(1):13-17.

**DOI:** <https://doi.org/10.25301/JPDA.281.13>

*Received: 30 July 2018, Accepted: 03 October 2018*

## INTRODUCTION

World Health Organization commission has requested the health ministries of the countries to give proper attention to the issues of access

to the health services and inequality in access to the dental services.<sup>1</sup> To promote oral health, prioritizing these access programs is necessary.<sup>2</sup> Oral health has great importance and impact on general health of an individual.<sup>3</sup> Prompt access to oral health care provider is one of the key factors in maintaining oral health thus providing a gateway to person's wellbeing.<sup>4</sup> As oral diseases are increasingly prevalent therefore, appropriate services at right place and at right time ensures prevention, early intervention and avoid complications.<sup>5</sup> In developing countries, access to dental care services is limited as compared to developed countries.<sup>3</sup> However, disparities among different social and economical groups within country have been reported. Divergent in demographic patterns and rapid urbanization

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increase strained in dental supply and utilization.<sup>6</sup> Moreover, various contributing factors such as financial cost, patient related barriers including dental fear,<sup>5</sup> lack of awareness, perceived need,<sup>7</sup> dental related barriers including past experience, lack of standardization of clinical protocol<sup>8</sup> and social barriers including language barrier and other cultural barriers reportedly reduce the access. Karachi has a population of around 14.9 million according to Pakistan Bureau of Statistics (2017). Despite having a sufficient number of dental hospitals and clinics in Karachi; the oral health status of our population is compromised as observed through many dental surveys and screening.<sup>9,10</sup>

Identifying barriers is one of crucial and utmost important step that will help to understand patient compliance and role of dentist.<sup>11</sup> Thus, it is vital to formulate baseline data for planning dental educational, promotional and preventive programs for the community to increase access and utilization of dental care. There is considerably lack of evidence in Pakistan, therefore this study assessed the barriers in accessibility and utilization of dental care and proposed recommendations proposed using Delphi-technique.

## METHODOLOGY

The mixed methods were used in two stages. Study duration was 4 months from December 2017-March 2018. At first stage, the study was performed as a cross-sectional descriptive survey. Multi-stage random sampling used to reach the targeted sample size. Sample size was calculated  $n=535$ .<sup>3</sup> Assistance was taken from the findings of previous studies and the formula was applied as well as critical analysis and the assumption of normality has been done (assuming  $\alpha = 0.05$ ,  $\beta = 0.1$ ,  $d = \epsilon/\sigma = 0.32$ ). Two urban towns were randomly selected from 18 towns of Karachi. Later, 4 union councils of population belong to different social strata were selected. Houses were randomly selected and response of one person per house was recorded by the principal investigator and three trained house surgeons after taking informed consent.

The barriers were properly categorized on the basis of available literature:<sup>(5)</sup>

0. No Barrier in accessing Dental Care
1. Financial Cost
2. Patient Related barriers
  - a. Dental fear
  - b. Busy schedules
  - c. Perceived beliefs
  - d. According to need
  - e. Lack of information
  - f. Medical issue

3. Dental Related barriers
  - a. Bad experience
  - b. Sterilization issues
  - c. Waiting time
  - d. Odd facility timing
  - e. Unavailability of skilled dentist
  - f. No near facility
4. Social barriers
  - a. Language barriers
  - b. Unavailability of female dentist
  - c. Doctor visit not in culture
  - d. Parda issue
5. Never visited dentist

Semi-structured questionnaire was used to collect data referenced to available literature reviews.

Data was analyzed using SPSS 21.0. Mean and standard deviations applied for demographics. Descriptive statistics determined the proportion distribution of respondents among of barriers. Pearson Chi-square test and One-way ANOVA employed for determining significance difference among barriers and demographic variables.

In this study the Delphi-technique used to comprehensively assess the barriers for utilization of the dental health services. The Delphi method is a structured communication technique or method, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. The experts formulated the answers in two or more rounds. Delphi technique is a methodology based on the principles that make decisions from a structured group of individuals hence it is more accurate than those from unstructured groups.<sup>12</sup>

Ten people who had their specialization in dental care and health services were involved to give recommendations on the basis of identified barriers for Delphi technique. In the first round, all the experts recommended possible solutions of the barriers on the Performa. After collecting the data from all experts a structured form of recommendations was enumerated. In second round, they prioritize the recommendations that have positive and more efficient compliance in our setting.

## RESULTS

Table 1 showed the distribution of study participants by gender, age groups, employed and non-employed. By applying Pearson Chi-square test there was no significant difference of gender with barriers (p-value 0.34). By applying One-way Anova there was no significant difference (p-value 0.06) found among barriers and age groups. Pearson Chi-square test revealed significant difference (p-value <0.001) barriers and occupation. Moreover, Table 1 showed

**Table 1:** Descriptive of the Study participants (n=535)

Variables	n	%
<b>Gender</b>		
Male	180	33.6
Female	355	66.4
<b>Age Groups</b>		
5-25	243	45.5
26-45	219	40.9
46-70	73	13.6
<b>Employed</b>		
Business	32	6.0
Office work	41	7.7
Engineer/Medical	16	3.0
Shopkeeper	14	2.6
Teacher	50	9.4
<b>Non-Employed</b>		
Housewife	160	29.8
Retired	11	2.1
Student	211	39.6

**Table 2:** Distribution of study participants in categories of barriers

Barriers	n	%
None	14	2.6
Financial cost	166	31.1
Patient related barriers	169	31.5
Dental related barriers	125	23.4
Social barriers	18	3.4
Never visited dentist	43	8.1
Total	535	100.0

distribution of gender in various categories of barriers. After using Delphi-technique, the prioritize recommendations illustrated in Table 2.

## DISCUSSION

This study presents, an in depth, assessment of the issues and barriers concerning dental access and utilization of oral care in Karachi. The finding of this study was based on gender, age, income, financial cost, patient related factors such as dental fear, busy schedules, lack of information and dental related factors such as bad experience, sterilization issues, waiting time, unavailability of dentist and social barriers such as language barriers and unavailability of female dentist. It is crucial to consider the barriers which

prevent population to access dental care and thus enjoy good health as dental health is related directly and indirectly to systemic health.<sup>3,4,13</sup> These barriers are considered as a psycho-social factor when viewed as a two person-framework therefore a good dentist-patient relationship is very important, as it affects the barriers to accessing dental care.<sup>7</sup> In our study barriers were identified from patient's point of view. In this study results showed that 'financial cost' was identified as a most important factor preventing access to dental care followed by busy schedule and previous bad dental experience respectively. Other main barriers included dental fear, perception of need, sterilization issues, lack of awareness and long waiting times in dental OPD. The Federation Dentaire Internationale (FDI) suggested three separate categories of barriers to dental care. The first of these related specifically to individual and included: lack of perceived need, anxiety and fear, financial considerations and lack of access. The second category related to the dental profession. They included, inappropriate manpower resources, uneven geographical distribution, inappropriate training to changing needs and demands and insufficient sensitivity to patient's attitudes and needs. The third and final category of barriers related to society, insufficient public support of attitudes conducive to health, inadequate oral health care facilities, inadequate oral health manpower, and planning and insufficient support research. Apart from this, three categories of barriers were identified pertaining to preventive dental care. These are dentist related barrier, patient related barrier and social barriers.

Due to enormously high poverty status in Pakistan, majority of the people are unable to pay for dental health care.<sup>14</sup> Both direct as well as indirect cost such as travelling cost was identified to prevent people from accessing dental health care providers. According to Roth Freeman, statistics throughout the world shows that limited annual income is directly related to people's ability to access dental care. It has been demonstrated that those from lower socio-economic status visits dentist less often due to the high cost of the treatment along with lack of the need to seek dental help.<sup>8,14</sup> One of the major barrier in access to the health services is not providing the appropriate financial contribution to the population even though WHO have emphasised on health insurances and most of the cost is paid by the patients.<sup>15</sup> In Pakistan, private dental insurance is not promptly available neither covered in public funding. However, studies stated that increasing the financial contribution of patients led to a decrease in necessary visits in the hospital emergency department.<sup>16,17</sup> A study conducted in Tehran shows that the financial cost is one of the major factor in not able to access the dental care due to insignificant insurance status.<sup>18</sup> Study conducted in India, where the majority of dental services

are provided by private practitioners shows that unaffordable dental care and the felt need along with their income influenced the number of dental visits. Some studies showed that despite the patient felt the need to visit dentist, they do not until the disease reached the chronic phase and root canal treatment or extraction is the only treatment. Other study showed that 93% of the patients only visited dentist when the pain is excruciating. Two major barriers to access to dental care is that the patient does not felt the need to visit the dentist and lack of awareness.<sup>19</sup> The other factor that identified as a barrier was busy schedule and previous bad dental experience. The effective and appropriate dentist-patient relationship is necessary for increasing confidence of the patient in dentist and thus influences the health seeking behavior of the patient. Lack of confidence on provider has also become one of the barriers to access health care as shown in Mohammad Pour's study.<sup>20</sup> In our study many people never visited due to social barriers and explained as its not included in their culture to visit dentist and they went for alternative medicines or spiritual healers. Similarly, Al-Shammari et al did a study in Kuwait proving that phobia's, false beliefs and bad habits are also the major barriers to access dental and health care.<sup>21</sup> Nevertheless, these issues could be resolved through dental health education and awareness campaigns. The overlapping causes and risk factors for dental diseases could be addressed through increasing dental health care programs, thus improving the overall oral health status.<sup>22</sup> Common risk factor approach now employing in contemporary preventive strategies. Oral health predominantly effect by Low sugar diet, smoking, nutritional balance, maintenance of oral hygiene, stress and trauma that cumulatively effect oral diseases (dental caries, periodontal diseases, oral cancers) and general health conditions (diabetes, cardiovascular diseases, lung cancers etc). The common risk factor approach can be implemented in a many ways. Food policy development and the Oral Health Promoting Schools initiative are used as examples of effective ways of promoting oral health.<sup>23</sup>

The results of Patouillard et al.<sup>24</sup> concluded that phobia of dental treatment has a direct relationship with not visiting to a dentist. In another study the quality of services, as one of the structural determinants, was reviewed. This study results showed that there was a fundamental difference between patients' expectations and their perceptions, and service providers should pay more attention to this difference.<sup>25</sup>

The strength of the present study is the use of Delphi method to propose recommendations. The priority should be given to include dental services in primary health care services, although in Pakistan basic health facilities providing treatments such as fillings, scaling and extractions however,

there is no policy implication regarding standardization and mass coverage. The subsidy by government on cost of materials and reduction in taxes reduced the overall cost of oral health care.

The limitation of the study is that majority of the responders were female and mostly were economically non-productive hence more concern about finances and social related barriers.

Furthermore, future qualitative researches are recommended for more insight evaluation of the barrier particularly social barriers and other factors contributing in limited access and utilization of dental care.

## CONCLUSION

It is concluded and recommended that robust advocacy and policies should be formulated to include dental services in primary health care delivery system of Pakistan to provide services at affordable cost. The collaboration of dental teaching hospitals with corporate industry and dental health awareness programs should be conducted on regular basis addressing masses to remove patient and social related barriers.

## ACKNOWLEDGMENT

We acknowledge all the head of departments of our institute for participating and provide their experts recommendations and all the respondents.

### *Disclosure:*

Scientific and ethical review committee Hamdard College of Medicine and Dentistry approved this study to be conducted.

### *Funding:*

There is no funding source for the research, it was self budget.

## CONFLICT OF INTEREST

There is no conflict of interest regarding employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications, and grants/funding.

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