



Original Article

Factors Influencing the Use of Dental Services and Access to Oral Health Care among Adults in Riyadh, Saudi Arabia

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ABSTRACT

This study aimed to investigate the use of dental services and self-reported factors affecting access to dental care among a representative adult population in Riyadh, Saudi Arabia. A cross-sectional survey was conducted among residents across the city, covering the north, east, south, and west regions. The survey was distributed in public spaces using a validated questionnaire and was also shared via Google Forms. A significance level of $P \leq 0.05$ was used, and data were analyzed using the Statistical Package for the Social Sciences (SPSS, version 21, Chicago, IL, USA). Descriptive statistics including standard deviation, means, and percentages were calculated. The majority of participants were male ($n = 376$ (60%)), and 29.9% ($n = 128$) were female. The distribution between single ($n = 238$ (47.2%)) and married ($n = 240$ (47.6%)) participants was approximately equal. When it came to dental care preferences, 79.9% ($n = 403$) favored private care, while 20.3% ($n = 101$) opted for government clinics. Among those who received treatment, 55.5% ($n = 280$) paid out of pocket, while 34.2% ($n = 173$) used insurance. The main barrier to accessing dental care was cost, which was cited by 89% ($n = 449$) of participants. The findings of this study indicate that the use of dental services and access to care in Riyadh is relatively high. However, there are notable barriers, particularly related to cost, that need addressing by the government. It is recommended to focus more on preventive care rather than just treating diseases.

Keywords: Access, Utilization, Barriers, Dental care, Riyadh

Introduction

Oral diseases represent a significant health challenge worldwide, often occurring alongside systemic conditions [1]. These infections can severely impact speech, social interactions, diet, and overall quality of life, while also contributing to chronic inflammation across various body systems. It is estimated that 10% of the global population suffers from periodontal disease, and over two billion people are affected by dental caries [2]. In Saudi Arabia, the prevalence of dental caries among children exceeds 80% [3], and periodontal disease affects between 35% and 63% of adults [4]. Managing these conditions carries a financial burden, but increasing access to affordable oral health care could promote prevention.

Improving oral health care in Saudi Arabia requires not only enhancing the availability of services but also encouraging the population to seek care. Disparities in access to oral health care exist between developed and developing nations. For example, in Australia, over 50% of the population visits a dentist regularly, while in Sudan, nearly 65% of individuals have never seen a dentist [5].

A study found that tooth brushing was the most common method for maintaining oral hygiene, followed by the use of Miswak [6].

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A study conducted in Abha, Saudi Arabia, surveying 499 individuals, found that approximately 58% of participants had utilized dental services [7]. However, a 2016 study reported that only 11.5% of participants in



Saudi Arabia visited the dentist for routine checkups [8]. This highlights the need for a nationwide survey on dental service utilization to better understand access to oral care.

Several factors impact the accessibility of oral health care among the general population. Research suggests that rural populations face greater economic challenges compared to those living in urban areas [9]. Additionally, rural residents often experience poorer access to oral health care due to sociodemographic factors [9]. People with higher education levels are more likely to seek oral health care than those with lower education levels [10]. Other barriers include difficulties in scheduling appointments, long waiting times, dental anxiety, and the high cost of treatment [10]. Oral health utilization is notably higher among high-income individuals (45%), with the absence of dental insurance being a significant obstacle for many [10]. The literature indicates that disparities in oral healthcare at the population level contribute to a considerable strain on the healthcare system. As such, examining current trends in dental service utilization and the factors that influence them is essential for shaping new policies aimed at improving access to oral health care.

The level of dental service utilization and the factors that impact it are essential for enhancing access to oral health care and its delivery in metropolitan areas of Saudi Arabia. However, recent data on dental service utilization and the influencing factors within the Saudi population is limited. Consequently, a comprehensive population-based study focusing on dental service use across major Saudi cities, including Riyadh, is necessary. Policymakers must prioritize improving oral healthcare access and overall outcomes for the Saudi population to support both oral and systemic health. Up-to-date statistics on dental service utilization, population access, and the barriers to oral health care will provide authorities with the critical information needed to implement practical solutions and improve healthcare access. The objective of this study is to explore dental service usage and the self-reported factors affecting access to dental care among a representative sample of the Saudi population in Riyadh.

Materials and Methods

A cross-sectional survey was conducted among a representative sample of the resident population in Riyadh, Saudi Arabia, adhering to the STROBE guidelines for reporting cross-sectional studies. The study lasted for four months. A comprehensive literature review was carried out to validate the survey, which revealed a lack of available data on oral health utilization and access to dental care.

The survey, consisting of a standardized and validated questionnaire, was distributed in public spaces across Riyadh, including mosques and shopping malls, as well as through Google Forms shared via various social media platforms. Eligible participants were healthy Saudi nationals aged 18 or older, with no history of mental, psychological, or psychiatric disorders. Individuals unable to read or write in Arabic were excluded from participation. Each participant was provided with a written consent form detailing the study's purpose and the option to withdraw at any time.

A target sample size of 500 was initially planned, but to account for potential dropouts and invalid responses, a total sample size of 508 was considered adequate. The research team, including statisticians and authors, thoroughly reviewed each question to ensure clarity and comprehension.

The Arabic-language questionnaire, adapted and modified from a previous research [7], was divided into four sections: sociodemographic information (age, income, gender, education, transportation, and marital status), general health status and disease recognition (systemic diseases, stress, disability, medication use, and ongoing or prior treatments), dental service utilization and preferences for private versus public services (last visit, frequency of visits, past treatments, preferred type of dentist, treatment cost, and insurance), and barriers to oral healthcare (clinic availability, awareness, appointment scheduling, treatment options, access, waiting lists, quality of care, dental anxiety, cost, priority, and time constraints).

Only completed questionnaires were included in the analysis, with 504 valid responses (86.89%) collected. A single investigator reviewed all responses to minimize bias, and reminder emails were periodically sent to encourage higher participation rates.

A P-value ≤ 0.05 was considered statistically significant. Descriptive data analysis was conducted using Statistical Package for the Social Sciences (SPSS Inc., version 21, Chicago, IL, USA). The analysis involved calculating the standard deviation (SD), percentages, and means.

Results and Discussion

Table 1 presents the sociodemographic characteristics of the study participants, showing that the majority were male (n = 376 (60%)), while females accounted for 29.9% (n = 128). The proportion of single (n = 238 (47.2%)) and married (n = 240 (47.6%)) individuals was nearly identical. Most participants were in the 46-60 years age range (n = 248 (49.2%)), followed by those aged 18-30 years (n = 114 (22.6%)) and 31-45 years (n = 123 (24.4%)). A significant portion of participants was unemployed (n = 217 (43.04%)), with similar proportions working in the private (n = 143 (28.3%)) and government sectors (n = 144 (28.5%)). Regarding education, most participants held a university degree (n = 348 (69%)), while those with intermediate (n = 74 (14.68%)) and postgraduate education (n = 71 (14.08%)) were nearly equal. A majority of respondents earned less than 10,000 SAR per month (n = 156 (30.9%)), followed by those making more than 15,000 SAR per month (n = 143 (28.37%)). **Figure 1** illustrates the sociodemographic statistics.

Table 2 provides information on physical health status, revealing that 78.2% (n = 397) of participants reported being healthy, while 23.01% (n = 116) were on medication for medical conditions. In terms of dental care, 93.7% (n = 472) of participants visited a dentist, with periodic checkups (n = 200 (39.68%)) and dental emergencies (n = 246 (48.8%)) being the most common reasons. Over half (n = 285 (56%)) had visited the dentist within the last six months, while 25.79% (n = 130) had done so within the past year. The majority preferred private dental services (n = 403 (79.9%)), while 20.3% (n = 101) chose government services. Most participants paid for dental treatment out-of-pocket (n = 280 (55.55%)), while 34.2% (n = 173) used insurance. **Figure 2** depicts the physical health status and service utilization data.

Table 3 shows statistics on perceived reasons for preferring private or government dental services and barriers to dental care. The primary barrier to accessing dental care was cost (n = 449 (89%)). Additionally, 79% (n = 400) of participants reported fearing dental treatment. While 64% (n = 324) found dentist appointments to be easily available, 58% (n = 294) cited busy schedules and time constraints as factors preventing them from using dental services. **Figure 3** presents the data on these perceived barriers and reasons for dental service preferences.

Table 1. Sociodemographic characteristics of respondents

Characteristics	Frequency	Percentage (%)
Gender		
Male	376	74.6
Female	128	25.3
Marital status		
Single	238	47.2
Married	240	47.6
Divorced	19	3.7
Widow	7	1.3
Work Sector		
Government	144	28.5
Private	143	28.3
No job	217	43.4
Age (years)		
18-30	114	22.6
31-45	123	24.4
46-60	248	49.2
≥ 61	19	3.76
Income		
No income	107	21.2
< 10000 SAR	156	30.9
B/w 10000 to 15000 SAR	98	19.4
≥ 15000 SAR	143	28.3
Education		
No education	-	-

Primary	11	2.1
Intermediate	74	14.6
University	348	69.0
Postgraduate	71	14.0

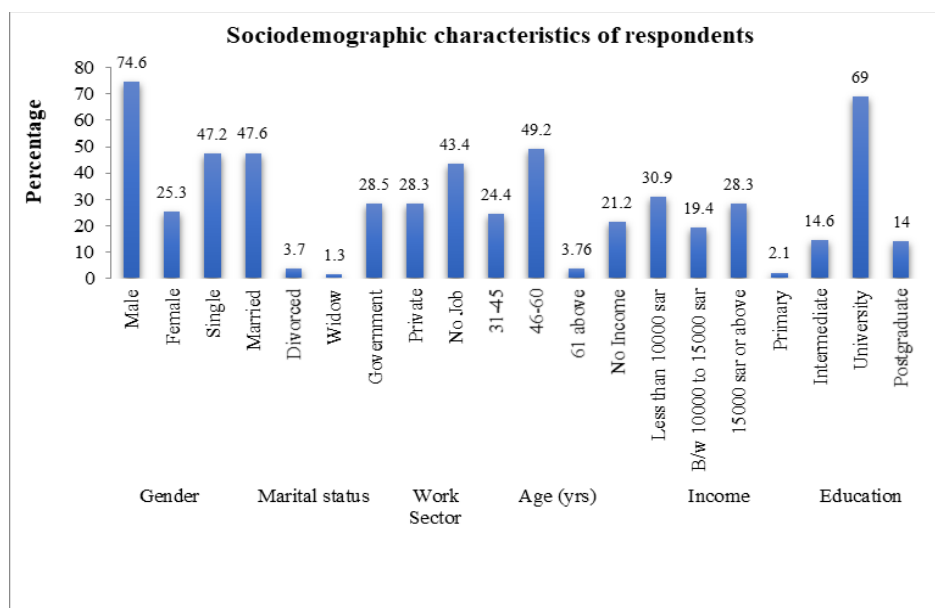


Figure 1. Sociodemographic characteristics of respondents

Table 2. Physical and health status and utilization of services

Health and service utilization	Frequency	Percentage (%)
Have health related problem		
No	397	78.2
Yes	107	21.2
Currently using medication		
Yes	116	23.0
No	388	76.9
Reason for acquiring dental services		
Periodical check-up	200	39.6
Emergency	246	48.8
Beautification	58	11.5
Last visit to the dental clinic		
Past six-year	285	56
One year	130	25.7
Between 1-2 years	89	17.6

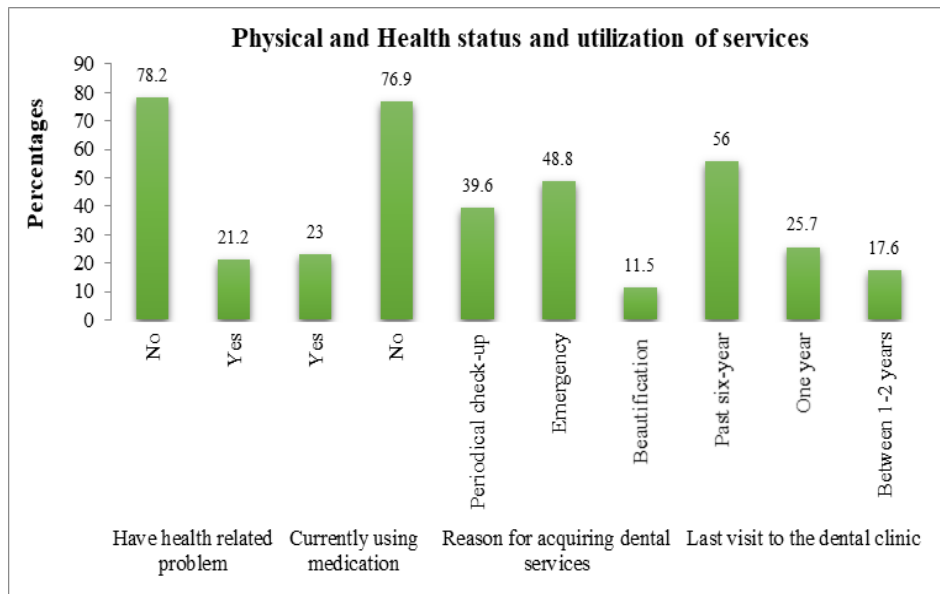


Figure 2. Physical and health status and utilization of services

Table 3. Perceived reasons for private and government dental services and possible barriers to dental services utilization

Barriers and perceived reasons for dental utilization	Frequency	Percentage (%)
Payment method		
Government	50	9.9
Insurance	173	34.3
Personal payment (PP)	280	55.5
Insurance and PP	1	0.19
Dental clinic preference		
Private practice	403	79.9
Government setup	101	20.0
Barriers In dental services		
Transportation	53	10.54
Cost	449	89.0
Phobia	2	0.39
Readily available for a dental appointment?		
Yes	330	64.3
No	174	36.7
Is the time factor for not utilizing dental services?		
Yes	295	58.5
No	209	41.1
Do you fear dental treatment?		
Yes	400	79.6
No	104	21.4

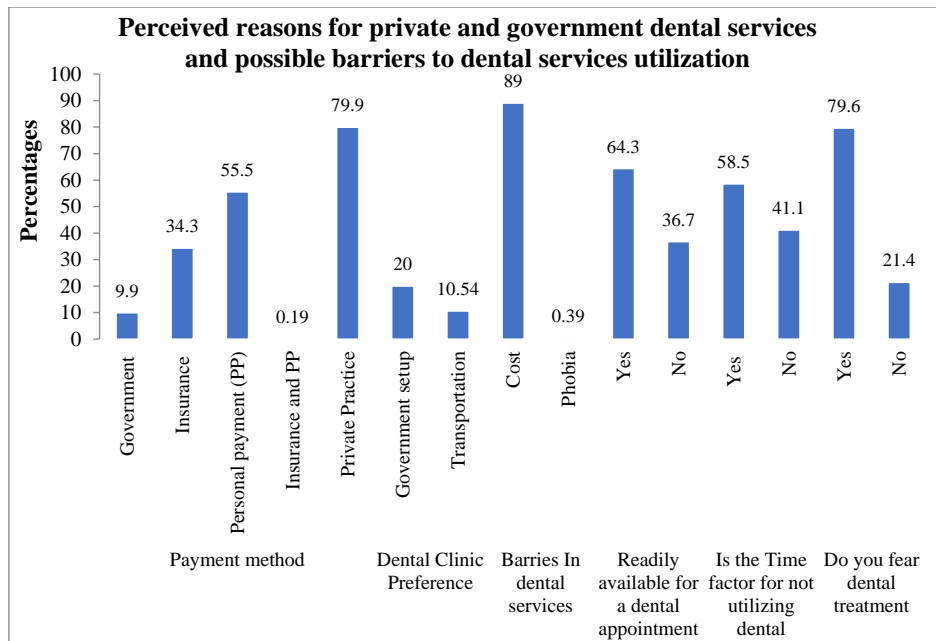


Figure 3. Perceived reasons for private and government dental services and possible barriers.

This cross-sectional survey offers a distinctive evaluation of dental service utilization and access to care across various regions of Riyadh, Saudi Arabia. To our knowledge, this survey is one of the few comprehensive studies conducted in Riyadh. Out of five hundred eighty emails sent, 504 responses were received, accounting for an 86.89% response rate. The high response rate can be attributed to follow-up reminders sent at regular intervals and the relatively short duration of the research [11].

In this study, a larger proportion of participants were male ($n = 376$ (60%)), while females represented 29.9% ($n = 128$). This gender distribution reflects societal norms in Riyadh, where women are often more occupied with family responsibilities, and male participation is typically higher [12].

The results of the study were compelling. When asked about dental care utilization, 93.7% ($n = 472$) of participants reported visiting the dentist on their own. Among the reasons for seeking dental care, periodic checkups ($n = 200$ (39.68%)) and dental emergencies ($n = 246$ (48.8%)) were the most commonly cited. These findings align with similar studies conducted in neighboring Arab countries [13]. The study focused on Riyadh, the capital city of Saudi Arabia, where increased awareness of dental care, improved infrastructure, and better resource allocation may have contributed to the higher utilization of dental services and regular checkups [14]. However, these results contrast with those from a previous study conducted in Abha, Saudi Arabia, which showed different trends [15]. In the study, 56% ($n = 285$) of participants reported visiting a dentist for dental services within the past six months, while 25.79% ($n = 130$) had visited a dental clinic within the last year. This pattern suggests that high-quality healthcare services may encourage more frequent dental visits, which aligns with the findings of the current research [16]. Another contributing factor to the increased utilization of dental care could be the growing awareness that many oral conditions can be treated and prevented with proper, early intervention [16].

The study also identified several barriers to accessing dental care, including the cost of treatment, lack of insurance, and the busy schedules of participants. These obstacles are consistent with findings from Al-Ansari's research, which also highlighted cost and lack of insurance coverage as primary barriers to preventive oral care [17]. Additionally, time constraints were noted by Obeidat *et al.* [18] as a significant challenge to dental service utilization. Both fear and cost were recurring issues in various studies. The current study found that participants preferred private dental clinics over government-run facilities, a trend likely influenced by the perceived higher quality of care in private settings. Factors such as better hygiene, well-trained staff, availability of specialists, shorter waiting times, and more personalized patient care were all cited as advantages of private practices [19]. These results are consistent with previous studies by Obeidat *et al.* [18].

Despite the limitations of the study, including the sample size, expanding the research to include participants from different regions across Saudi Arabia would provide a more comprehensive understanding of dental service utilization nationwide. Future studies could also benefit from incorporating qualitative assessments to complement the quantitative data on dental care utilization.

Conclusion

The findings of the current study indicate that dental care utilization and access were notably better in the capital of Saudi Arabia. However, several barriers to accessing care were identified that require attention from government authorities. Emphasis should be placed on promoting preventive care rather than focusing solely on the treatment of dental diseases.

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Ethics Statement: This study complies with the ethical guidelines set by the REU ethics committee.

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