

Determinants of Dental Health Care Seeking Behaviour in Aseer Province, Kingdom of Saudi Arabia

Salma Abubaker Abbas Ali^{1*}, Syed Sadatullah¹, Ahmed Babiker Ali², Asim Elsir Elmahdi³ and Weam Sharif Abdelrazag Ibrahim⁴

¹Department of Diagnostic Dental Sciences and Oral Biology, King Khalid University, Abha, KSA; ²Department of Restorative Dental Sciences, King Khalid University, Abha, KSA; ³Department of Prosthodontics, King Khalid University, Abha, KSA; ⁴Department of Periodontics and Community Dental Sciences, King Khalid University, Abha, KSA

Corresponding author:

Salma Abubaker Abbas Ali,
Department of Diagnostic Dental
Sciences and Oral Biology, College
of Dentistry, King Khalid University,
Abha, KSA,
Tel: 00966536995610;
E-mail: sabbas@kku.edu.sa

Abstract

Aim: This study aims at exploring the barriers which prevent a cohort of Saudi population residing in Aseer province- Southern region from seeking and utilizing dental care services. **Methods:** This cross-sectional observational study was conducted in three main cities of Aseer province in the southern region of Saudi Arabia, Abha, Khamis Mushayt and Mahayil Aseer in addition to two villages of Tabab and Bahat Rabeea within the geographical district. A self-administered questionnaire which was validated prior to the study was distributed in the Arabic language to facilitate communication with the study participants. Out of 400 study samples, 325 were suitable for analysis. Pearson's chi-square test with 95% confidence interval level was performed and SPSS version 22 was used for statistical analysis. **Results:** In our study, out of the 400 questionnaires, 325 were suitable for analysis accounting a response rate of 81.3%. Majority of the samples were between (21-30) years old (N=144, 44%). Males constituted 51.1% (N=166) of the total number while females accounted for 48.9% (N=159). The most common reason for visiting a dentist was Emergency dental pain (N=81, 24.9%), 35% (N=114) haven't visited a dentist in more than a year. The most common barrier for not seeking a dental treatment for 31% of the patients (N=101) was patients' perception of lack of need to visit a dentist without the presence of pain. Gender, educational level, geographical district and traditional oral practices were significantly associated with patients' dental seeking behavior. **Conclusion:** Based on the study results, expansion of dental awareness programmes, additional free dental services, regular transportation to and from dental centres as well as availability of more appointments are needed for more engagement of the society into dental care. Further studies are required to explore more geographical districts in KSA and ensure equal distribution of dental care among Saudi habitants.

Keywords: Dental care seeking behavior; Barriers; Cost; Fear; Logistics

Introduction

Scholars have defined the concept of healthcare seeking behavior as, "any action or inaction undertaken by individuals who perceive them to have a health problem or to be ill for the purpose of finding an appropriate remedy".^[1] Various behavioral models have been established by researchers for the purpose of understanding the range of health seeking behavior of individuals.^[2] One of the most widely utilized models is the Andersen's model that has a focus point on influential barriers that are categorized as population based characteristics, health care utilization systems and the environmental factors.^[3] These models provide informative scientific data that facilitate interventions for the stakeholders to provide policies that reduce the spread and complications that may arise upon delaying dental care.

The International Dental Federation has categorized the barriers to seeking dental care into three categories (1) individuals related factors i.e., perception of needlessness for dental treatment, fear, cost, and logistics), (2) the dental facility (attitude of staff and too far appointments), and (c) communal factors (availability of dental care centers).^[4]

Oral health diseases require essential preventive measures and rapid care upon occurrence, as it has an established impact on the quality of life of the Saudi population.^[5] Despite the fact that most oral diseases are preventable, yet, within the recent years, a marked increase in the prevalence of oral diseases i.e., dental caries and periodontitis in Saudi Arabia has been documented.^[6,7] A current systematic review yielded the high prevalence of dental caries among the Saudi schoolchildren with an estimate of 80% and 70% within the primary and permanent dentition respectively.^[8] This prevalence was higher in (12-13) year old children with an estimate of (94.4%) of dental caries.^[9]

Hence, impaired health seeking behavior has been associated with amplified morbidity and mortality and poorer survival outcomes,^[10] in our study, we aimed at exploring the social,

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

How to Cite this Article: Abbas Ali SA, et al. Determinants of Dental Health Care Seeking Behaviour in Aseer Province, Kingdom of Saudi Arabia. *Ann Med Health Sci Res.* 2020;10: 1034-1039.

geographical, financial, cultural and dental care system related barriers that could have a direct impact on the dental care seeking behavior among a cohort of Aseer region habitants.

Materials and Methods

This was an observational cross-sectional study of 325 Saudi residents of Aseer province, southern region, Kingdom of Saudi Arabia. Data was collected from the three main cities of Aseer province, Abha, Khamis Mushayt, Mahayail Aseer in addition to two villages (Tabab and Bahat Rabea) that are within the geographical boundaries of the province named.

The investigators thoroughly briefed the study participants about the aims of the project, and clearly explained that the participation is voluntarily with no monetary compensation. Consequently the individuals who agreed to join the study signed a written consent. Few participants were below the age of 18 and hence one of the parents signed the consent of his/her behalf. Participants' confidentiality was maintained throughout the stages of the project. Ethical approval (SRC/REG/2015-2016/49) was obtained from the Scientific Research Committee at the College of Dentistry- King Khalid University.

Convenient sampling was used to recruit the study participants, 400 self-administered questionnaires were distributed and 325 were received and suitable for analysis accounting the response rate at 81.3%. The questionnaire contained close end questions that included the socio-demographic data of age, gender, marital status, educational level and residence. Moreover, oral habits of brushing, flossing, use of traditional methods, interval and causes of dental visits were assessed. Lastly, factors influencing the dental seeking behavior of individuals were investigated.

A pilot study was conducted with 20 participants to ensure the reliability of the questionnaire; consequently, further clarifications were added to ensure optimum understanding of the questions. Questionnaires were administered in hard copies to the study participants.

Statistical analysis was performed using (SPSS) Package for Social Sciences version 22. Confidence interval of 95%, P-value of 0.05 was considered statistically significant. Descriptive data of socio-demographics, oral habits, dental visits interval were shown in graphs, while Pearson's Chai square analytical test was performed to investigate the association between the study variables and the dental care seeking behavior of Aseer province habitants.

Results

A total of 400 questionnaires were included in the study, 325 of which were suitable for the analysis, 75 questionnaires were excluded due to incomplete or missing data. Response rate was 81.3% (325/400). Figure 1 illustrates the socio-demographic data obtained from the questionnaires. It shows a close distribution between the study participants in relation to gender, males constituted (51.1% N=166) of the total samples, whereas females accounted for (48.9% N=159). Sixty percent of the participating individuals were married (N=195), 69.5% (N=226) had obtained a university degree in relation to the educational level. The geographical distribution of the samples indicated that 38.8% of the included cohort resided in Abha city (N=126), and another 38.8% of the habitants lived in Khamis Mushayt (N=126), furthermore, 8.6% (N=28) were from Mahayil Aseer and forty five of the Saudis included in this study lived in the small villages of Tabab and Bahat Rabea accounting for 13.5% of the cohort.

Data related to the oral habits of the participants has shown that (89.2% N=290) of the study participants brush their teeth daily. Among which fifty percent (N=146) brush once per day, and forty percent brush twice (N=117). Using a dental floss was not a familiar habit among 60.0% (N=197) of the samples, and (58.2%, N=189) never used a mouth wash in their routine dental care. Forty four percent (N=146) of individuals reported using a traditional method for brushing called "Miswak" a tiny

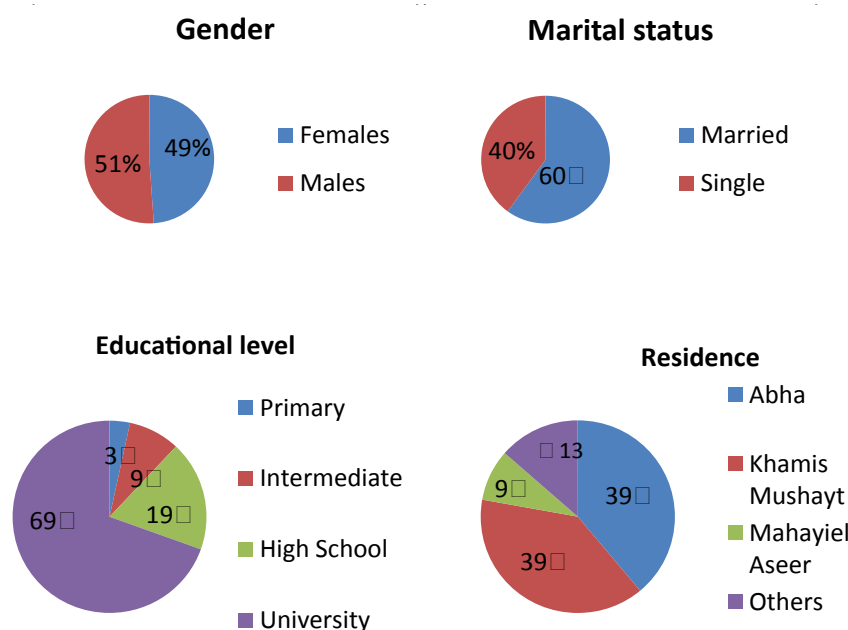


Figure 1: Illustration of patient's demographics, gender, marital status, educational level and residence.

piece of wood that is widely utilized for oral practices in the Kingdom of Saudi Arabia.

The most recent dental visit for 44.9% of the study participants (N=146) was in less than a year, whereas thirty five percent of them last visited the dentist in more than a year and sixty four of the habitants (19.7%) never experienced a dental visit before.

Figure 2 shows the utmost reported reasons for visiting a dental setting. Prescheduled restorative treatment (N=92, 28.3%) was the most stated reason followed by an emergency dental pain (N=81, 24.9 %), periodontal therapy and extraction (20.9%, 13.5%) respectively. Other procedures constituted 12.3% of the reported dental utilization.

Barriers to seeking dental care shown in Figure 3 varied amongst the study participants, (31.1%, N=101) perceived the needlessness to visit a dentist unless experiencing a severe pain, however, cost and high financial burden of dental sessions prevented (17.9% N=58) from seeking the needed dental care. Fear and apprehensiveness were influencing factors that altered the attitude of patients towards seeking treatment, as (13.5%, N=44) revealed that their personal fear perception prevented them from visiting the dentist. Forty three patients (13.2%) of the study samples found massive difficulties in finding appointments, as the scheduled visits were too far apart.

Furthermore, participants indicated additional barriers that discouraged them from seeking dental care, that included, an unfavorable past dental experience (5.8%), logistics i.e., transportation to and from the dental facility (3.4%), quality standard of the provided dental services (1.5%) and lastly the attitude of the staff in a previous interactive dental session (1.2%).

This study also aimed at investigating the association between the barriers previously indicated by the participants and their dental seeking behavior. Table 1 illustrates that gender has shown a statistically significant association in relation to their dental seeking behavior (P-value=0.014), females indicated that fear (70.05%), logistics (90.9%) and attitude of staff (75.0%) were the most substantial barriers that had an adverse effect on their desire to seek dental care. However, males in the study have perceived cost (60.3%) and the needlessness to visit the dentist unless severe pain is felt (70.3%) as their major obstacles.

The educational level of the study participants was found to be statistically significant with their dental seeking behavior [Table 2] (P-value=0.016), the majority of the university graduates among the study partakers found that the standard of dental equipment (80.0%), Logistics (81.8%) and lack of time (82.5%) were the main factors that affected their willingness to pursue dental care.

Furthermore, residential areas within the groups were found to be statistically significant in regard to dental seeking behavior of their habitants [Table 3] (P-value=0.001). In Abha, the largest city of Aseer province, the city that has the single college of dentistry within the province, residents have revealed that logistics (63.6%) and too far appointments (51.2%) were their major concern when it comes to taking a decision of visiting a

Reason for last dental visit

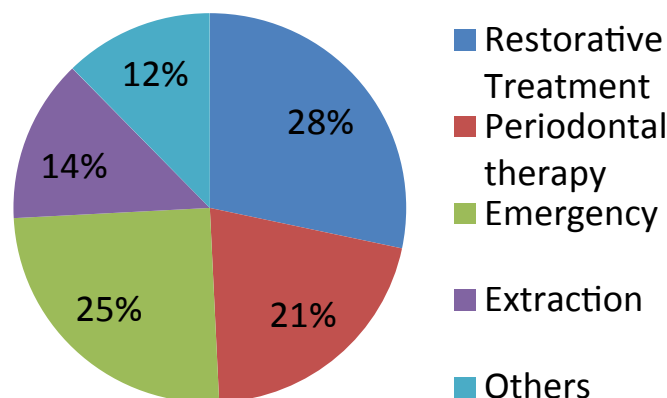


Figure 2: Illustration of the reasons for the last dental visit indicated by the study participants.

Barriers of seeking dental care

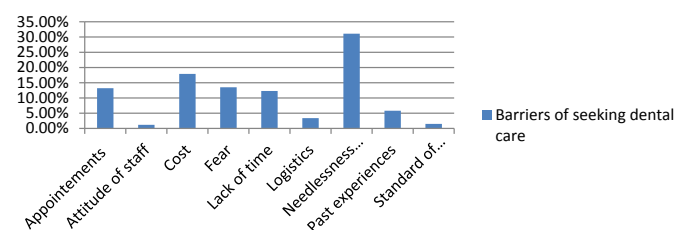


Figure 3: Illustration of various barriers of seeking dental care indicated by the study participants.

dental facility. Khamis mushait locals indicated that needlessness to visit a dental facility unless pain is felt (52.5%) in addition to fear (43.2%) controlled their desire to visit a dentist. On the contrary, Mahayiel Aeer residents, suffered mainly from the standard of the equipment available at their dental care centers (20.0%), in addition to unfavorable previous experiences in dental treatment (10.5%) and high cost (10.3%).

The use of traditional methods for oral practices i.e., Miswak has established a statistically significant association with dental care seeking behavior of our study participants (P-value=0.003) as shown in Table 4.

Discussion

In this study, we investigated the dental care seeking behavior pattern among 325 of Aseer province habitants. Furthermore, we verified the factors that could have an association with dental care utilization.

Majority of the study samples were highly educated, yet, thirty five percent of the participants last visited the dentist in more than a year, and almost twenty percent never visited a dental facility before. This result was in accordance to studies showing the negative correlation between the level of education and health seeking behavior of individuals in a comparative study in Kuwait revealed that lower educational level have affected the pattern via which individuals try to find medical care and was found to be a harmful event within the individuals'

Table 1: Association between gender and DSB.

Sex	Dental Seeking Behavior									Total
	AP	AS	C	F	L	LT	N	PE	S	
Female	28	3	23	31	22	10	30	10	2	159
	65.1%	75.0%	39.7%	70.5%	55.0%	90.9%	29.7%	52.6%	40.0%	48.9%
Male	15	1	35	13	18	1	71	9	3	166
	34.9%	25.0%	60.3%	29.5%	45.0%	9.1%	70.3%	47.4%	60.0%	51.1%
Total	43	4	58	44	40	11	101	19	5	325
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-square value: 104.20, P-value: 0.014, AP: Too far appointments, AS: Attitude of staff, C: Cost, F: Fear of dental treatment, L: Lack of time, LT: Logistics, N: Needlessness for dental care unless pain is felt, PE: Unfavorable previous experiences, S: Standard of equipment in the dental facility.

Table 2: Association between educational level and DSB.

Education	Dental Seeking Behavior									Total
	AP	AS	C	F	L	LT	N	PE	S	
High school	10	1	14	9	3	0	20	3	0	60
	23.3%	25.0%	24.1%	20.5%	7.5%	0.0%	19.8%	15.8%	0.0%	18.5%
Intermediate	4	0	8	3	3	0	9	1	0	28
	9.3%	0.0%	13.8%	6.8%	7.5%	0.0%	8.9%	5.3%	0.0%	8.6%
Primary	0	0	3	2	1	2	2	0	1	11
	0.0%	0.0%	5.2%	4.5%	2.5%	18.2%	2.0%	0.0%	20.0%	3.4%
University	29	3	33	30	33	9	70	15	4	226
	67.4%	75.0%	56.9%	68.2%	82.5%	81.8%	69.3%	78.9%	80.0%	69.5%
Total	43	4	58	44	40	11	101	19	5	325
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-square value: 60.80, P-value: 0.016, AP: Too far appointments, AS: Attitude of staff, C: Cost, F: Fear of dental treatment, L: Lack of time, LT: Logistics, N: Needlessness for dental care unless pain is felt, PE: Unfavorable previous experiences, S: Standard of equipment in the dental facility.

Table 3: Association between residence and DSB.

Residence	Dental Seeking Behavior									Total
	AP	AS	C	F	L	LT	N	PE	S	
Abha	22	4	24	17	18	7	23	9	2	126
	51.2%	3.17%	41.4%	38.6%	45.0%	63.6%	22.8%	47.4%	40.0%	38.8%
khamis	10	0	23	19	12	2	53	6	1	126
	23.3%	0.0%	39.7%	43.2%	30.0%	18.2%	52.5%	31.6%	20.0%	38.8%
Mushayt	3	0	6	3	4	0	9	2	1	28
	7.0%	0.0%	10.3%	6.8%	10.0%	0.0%	8.9%	10.5%	20.0%	8.6%
Aseer	8	0	5	5	6	2	15	2	1	44
	18.6%	0.0%	8.6%	11.4%	15.0%	18.2%	14.9%	10.5%	20.0%	13.5%
Total	43	4	58	44	40	11	101	19	5	325
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-square value: 103.17, P-value: 0.001, AP: Too far appointments, AS: Attitude of staff, C: Cost, F: Fear of dental treatment, L: Lack of time, LT: Logistics, N: Needlessness for dental care unless pain is felt, PE: Unfavorable previous experiences, S: Standard of equipment in the dental facility.

Table 4: Association between traditional methods and DSB.

Traditional methods	Dental Seeking Behavior									Total
	AP	AS	C	F	L	LT	N	PE	S	
No	25	3	24	21	20	11	65	7	3	179
	58.1%	75.0%	41.4%	47.7%	50.0%	100.0%	64.4%	36.9%	60.0%	55.1%
Yes	18	1	34	23	20	0	36	12	2	146
	41.9%	25.0%	58.6%	52.3%	50.0%	0.0%	35.6%	63.1%	40.0%	44.9%
Total	43	4	58	44	40	11	101	19	5	325
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-square value: 38.59, P-value: 0.003, AP: Too far appointments, AS: Attitude of staff, C: Cost, F: Fear of dental treatment, L: Lack of time, LT: Logistics, N: Needlessness for dental care unless pain is felt, PE: Unfavorable previous experiences, S: Standard of equipment in the dental facility.

demographics. [11] The prevalence of dental caries in Saudi Arabia in adults between thirty five and forty years old was estimated to be 98% and the prevalence of dental caries in the Gulf Cooperation Council area is estimated to be 64.7%,

[12,13] this could explain the finding in our study indicating that the most common reported cause for dental treatment was prescheduled restorative treatment and dental pain respectively. Oral habits of the study participants were found to be

encouragingly advancing compared to previous studies that tackled the practices of the Saudi population, El-Bcheraoui et al., showed that 16.3% of the Saudis never brush their teeth and 52% never use a traditional method of Miswak, [14] this was on the contrary to our findings, as eighty nine percent brush their teeth and forty four percent of our participants use Miswak as a regular oral practice.

The most reported reason for utilization of dental care was patients' perception of the need to visit a dentist, as almost thirty one percent of the study cohort showed no interest or desire to seek dental care unless pain is felt. This finding was in accordance with a study conducted in an urban district in India which stated that 38% of their patients do not utilize dental care unless pain is experienced. [15] The causes for frequent dental care visit was investigated in Finland and concluded that pain was the chief complaint of majority of the patients who attended the clinics between 2001 and 2013. [16]

Though governmental public health sector in Saudi Arabia provides free dental care for majority of the population, nevertheless, with the growing population there is an increase in the demand for wide range health care coverage that is efficient and cost effective. [17] Cost was a major barrier that negatively affected almost eighteen percent of our study cohort from getting the needed dental treatment. This could be attributed to the unequal ratio of available dental health care centers and the growing population, resulting in patients utilizing private dental sectors. [18] With the high cost of dental care in Saudi Arabia, patients are faced with massive expenditure for basic dental services and this has clearly affected their dental care seeking behavior. [19]

Moreover, fear and apprehensiveness towards dental treatment was a factor that contributed to the seeking behavior of patients in our study, as thirteen percent indicated fear as their major barrier and prevented them from visiting dental facilities.

Seigel et al., investigated the various types of dental fear that create a vicious cycle where patients stop utilizing dental services and hence end with more complicated dental diseases that could have been prevented with earlier visits. [20]

Individuals showed fear from dental instruments like needles, hand pieces and drilling. [21] Others showed tension from contracting a cross infection like Hepatitis B and COVID 19 virus. [22] Furthermore, patients showed resistance to repeat an unfavorable past experience [23] and this was in accordance to our findings as almost six percent of the study cohort showed no desire to go over a mistreatment once again. Fear from exposure to radiographic radiations was among the types of dental fears that patients usually face. [24]

Logistics, i.e., transportation to and from the dental facility and/or presence of a co patient was indicated as a barrier in 3.4% of our participants, this results have an impact on the socioeconomic status of the habitants, as utilization of public transport in Saudi Arabia is of less use to female patients who tend to use private drivers and usually need a companion especially elderly ones. The location of the dental care centers hugely impact the logistical element in the decision making of

seeking a medical care, the more individuals live near accessible medical centers, the more they tend to have a good compliance in regard to their appointments. [25]

Additionally, in this project we investigated the factors that could have a significant association with patients' dental care seeking behavior. Gender (P-value=0.014), educational level (P-value=0.016), residence (P-value=0.001), and traditional oral practices (P-value=0.003) have shown a statistically significant association with dental care utilization behavior of our study participants.

The most indicated statistically significant barriers for females were logistics, fear and attitude of staff. Nevertheless, males stated that cost and the needlessness to visit the dentist unless severe pain is felt as significant barriers for seeking dental care.

Few comparative studies conducted in Saudi Arabia and abroad, revealed no statistical difference in gender when it comes to beliefs of dental seeking behavior; yet, females were shown to have a more positive attitude in regard to practices. [26,27] A 2016 study investigated the influence of gender on medical care seeking behavior of individuals and concluded that females have more tendencies to prevent themselves from illnesses and gain more trust in their physicians and hence have a superior medical care seeking behavior than their counterpart males. [28]

Residence of our study participants showed a statistically significant association with their dental care seeking behavior, Abha city has the single college of dentistry within Aseer region along with number of private dental centers, where free dental care is provided within its premises, and this creates a huge burden on the facility and leads to appointments being held too far from each other. This elucidates the reason behind the study finding where fifty one percent of Abha residents indicated that too far appointments was the major barrier for them getting the needed dental care. For Khamis Mushayt habitants, the perception of needlessness to visit a dentist was their major obstacle. Taber et al., indicated that lower perceived need for treatment could be attributed to patients cognitive perceptions, i.e., the symptoms could improve with time, ability of their bodies to heal themselves and fear of creating a burden on their spouses or families. [29]

Almost forty five percent of the participants do use (Miswak), a wooden piece that is used for oral practices by majority of the Saudi population. However, various studies have found Miswak to be inferior in maintain favorable oral hygiene. [30] Nevertheless, patients find psychological satisfaction in using traditional methods regardless of the outcome [31] and this has a deeper cultural beliefs and replacement of medical care with an alternative stream of medicine. [32]

Conclusion

Cognitive health seeking behavioral models have the potential to help medical professionals and policy makers better understand the grounds behind patients' attitude towards seeking medical care. Therefore, this could result in reduction of delay in diagnosis, improve patients' compliance and develop plans of health promotion in a range of frameworks. This

study experienced few limitations mainly the small size of the participants and the restriction of the study settings.

Within the limitations of the study, we conclude the following:

- Expansion of dental awareness programs, establishment of more free dental care facilities, regular transportation to and from the dental centers in addition to availability of more appointments are major needs for more engagement of the society into dental care.
- Further studies are needed to investigate additional geographical districts in KSA and ensure equal distribution of dental care among the Saudi habitants.

Competing Interests

The authors declare that they have no competing interests.

References

1. Latunji OO, Akinyemi OO. Factors influencing health-seeking behaviour among civil servants in ibadan, Nigeria. *Ann Ib Postgrad Med.* 2018;16:52-60.
2. Mackian S, Bedri N, Lovel H. Up the garden path and over the edge: where might health-seeking behaviour take us? *Health policy and planning.* 2004;19:137-146.
3. Andersen RM. Revisiting the behavioral model and access to medical care: Does it matter? *J Health Soc Behav.* 1995;36:1-10.
4. Devaraj C, Eswar P. Reasons for use and non-use of dental services among people visiting a dental college hospital in India: A descriptive cross-sectional study. *Eur J Dent.* 2012;6:422-427.
5. Kassim S, Bakeer H, Alghazy S, Almaghraby Y, Sabbah W, Alsharif A. Socio-demographic variation, perceived oral impairment and oral impact on daily performance among children in Saudi Arabia. *Int J Environ Res Public Health.* 2019;16:2450.
6. Abstracts from the 50th European Society of Human Genetics Conference: Posters. *Eur J Hum Genet.* 2019;26.
7. Al-Ansari A, El-Tantawi M, Mehaina M, Alhareky M, Sadaf S, Al-Humaid J, et al. Regional caries data availability in Saudi Arabia: Impact of socioeconomic factors and research potential. *Saudi Dent J.* 2019;31:157-164.
8. Al Agili DE. A systematic review of population-based dental caries studies among children in Saudi Arabia. *Saudi Dent J.* 2013;25:3-11.
9. Bokhari AM, Quadri MFA. What factors contribute to the self-reported oral health status of Arab adolescents? An assessment using a validated Arabic-WHO tool for child oral health (A-OHAT). *BMC Oral Health.* 2020;20:21-.
10. Mhalu G, Weiss MG, Hella J, Mhimbira F, Mahongo E, Schindler C, et al. Explaining patient delay in healthcare seeking and loss to diagnostic follow-up among patients with presumptive tuberculosis in Tanzania: A mixed-methods study. *BMC Health Services Res.* 2019;19:217.
11. Al-Shammari K, Al-Ansari J, Al-Khabbaz A, Honkala S. Barriers to Seeking Preventive Dental Care by Kuwaiti Adults. *Medical principles and practice: international journal of the Kuwait University, Health Science Centre.* 2007;16:413-419.
12. Al-Ansari A. Prevalence, severity, and secular trends of dental caries among various Saudi populations: A literature review. *Saudi J Med Med Sci.* 2014;2:142-150.
13. Alayyan W, Al Halabi M, Hussein I, Khamis A, Kowash M. A Systematic Review and Meta-analysis of School Children's Caries Studies in Gulf Cooperation Council States. *J Int Soc Prev Community Dent.* 2017;7:234-241.
14. El-Bcheraoui C, Tuffaha M, Daoud F, Kravitz H, Al-Mazroa MA, Al-Saeedi M, et al. Use of dental clinics and oral hygiene practices in the Kingdom of Saudi Arabia, 2013. *Int Dent J.* 2016;66:99-104.
15. Rambabu T, Koneru S. Reasons for use and nonuse of dental services among people visiting a dental hospital in urban India: A descriptive study. *J Educ Health Promot.* 2018;7:99-.
16. Linden J, Josefsson K, Widström E. Frequency of visits and examinations in the Public Dental Service in Finland - a retrospective analysis, 2001-2013. *BMC Oral Health.* 2017;17:138.
17. Al-Hanawi MK, Alsharqi O, Almazrou S, Vaidya K. Healthcare Finance in the Kingdom of Saudi Arabia: A Qualitative Study of Householders' Attitudes. *Appl Health Econ Health Policy.* 2018;16:55-64.
18. Asmri M, Almalki M, Fitzgerald G, Clark M. The public healthcare system and primary care services in Saudi Arabia: a system in transition. *E Mediterr Health J.* 2019;26.
19. Al-Baty A, Al-Ghasham H, Al-Wusaybie M, El-Tantawi M. Dental expenditure and catastrophic dental expenditure in Eastern Saudi Arabia: Pattern and associated factors. *J Clin Exp Dent.* 2019;11:e601-e608.
20. Siegel K, Schrimshaw EW, Kunzel C, Wolfson NH, Moon-Howard J, Moats HL, et al. Types of dental fear as barriers to dental care among African American adults with oral health symptoms in Harlem. *J Health Care Poor Underserved.* 2012;23:1294-1309.
21. Carter AE, Carter G, Boschen M, AlShwaimi E, George R. Pathways of fear and anxiety in dentistry: A review. *World J Clin Cases.* 2014;2:642-653.
22. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS, et al. Fear and Practice Modifications among Dentists to Combat Novel Coronavirus Disease (COVID-19) Outbreak. *Int J Environ Res Public Health.* 2020;17:2821.
23. Beaton L, Freeman R, Humphris G. Why are people afraid of the dentist? Observations and explanations. *Medical principles and practice: international journal of the Kuwait University, Health Science Centre.* 2014;23:295-301.
24. Kweon HHI, Lee JH, Youk TM, Lee BA, Kim YT. Panoramic radiography can be an effective diagnostic tool adjunctive to oral examinations in the national health checkup program. *J Periodontal Implant Sci.* 2018;48:317-325.
25. Rocha CM, Kruger E, McGuire S, Tennant M. Role of public transport in accessibility to emergency dental care in Melbourne, Australia. *Aust J Prim Health.* 2015;21:227-232.
26. Hamasha AAH, Alshehri A, Alshubaiki A, Alssafi F, Alamam H, Alshunaiber R. Gender-specific oral health beliefs and behaviors among adult patients attending King Abdulaziz Medical City in Riyadh. *Saudi Dent J.* 2018;30:226-231.
27. Mamai-Homata E, Koletsis-Kounari H, Margaritis V. Gender differences in oral health status and behavior of Greek dental students: A meta-analysis of 1981, 2000, and 2010 data. *J Int Soc Prev Community Dent.* 2016;6:60-68.
28. Thompson AE, Anisimowicz Y, Miedema B, Hogg W, Wodchis WP, Aubrey-Bassler K. The influence of gender and other patient characteristics on health care-seeking behaviour: A QUALICOPC study. *BMC Fam Pract.* 2016;17:38.
29. Taber JM, Leyva B, Persoskie A. Why do people avoid medical care? A qualitative study using national data. *J Gen Intern Med.* 2015;290-307.
30. Shah N, Mathur VP, Jain V, Logani A. Association between traditional oral hygiene methods with tooth wear, gingival bleeding, and recession: A descriptive cross-sectional study. *Indian J Dent Res.* 2018;29:150-154.
31. Gupta VB. Impact of culture on healthcare seeking behavior of Asian Indians. *J Cult Divers.* 2010;17:13-19.
32. Luo JYN, Liu PP, Wong MCM. Patients' satisfaction with dental care: a qualitative study to develop a satisfaction instrument. *BMC Oral Health.* 2018;18:15.