

# Perceived Healthcare Priorities, Barriers, and Preferences When Selecting Private or Governmental Healthcare Services Among a Sample of University Affiliates from Saudi Arabia

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**Purpose:** This study aims to measure the perceived healthcare priorities, barriers, and preferences when selecting private or governmental healthcare services among a sample of university affiliates from Saudi Arabia.

**Methods:** This study utilized a cross-sectional design to reach targeted adults on the Jazan University campus. Data were collected during personal interviews. The questionnaires measured participant demographics, perceived healthcare priorities, barriers, and preferences when selecting private or governmental healthcare services. A chi-squared test was used to detect statistically significant differences between demographic and clinical characteristics according to preferences in their healthcare-seeking behavior.

**Results:** A total of 3083 university affiliates participated in this investigation. The mean age of the participants was 28 years, 49.6% of whom were males. Among the sample, 63% were students, and the remaining were university staff. The health condition perceived as most important was diabetes, and most of the sample viewed primary healthcare as the most vital service. The healthcare-seeking behavior of the sample indicated a higher preference for using governmental healthcare services. However, notable barriers related to the availability of appointments, long waiting times when visiting a healthcare facility, and healthcare costs were identified. Preference for private healthcare services was higher among females, expatriates, non-Arabic speaking affiliates, those with higher socioeconomic status, and health insurance owners ( $p$ -values  $< 0.05$ ). Additionally, higher utilization of private healthcare services was noted among participants who frequently visit dentists and physicians and those performing consistent, routine medical checkups ( $p$ -values  $< 0.05$ ).

**Conclusion:** The findings indicate the importance of strengthening the role of primary healthcare to address the health needs required for preventing and managing chronic diseases, such as diabetes. Additionally, enhancing access to and effectiveness of primary healthcare may reduce the impact of healthcare barriers associated with limited appointments and prolonged waiting times.

**Keywords:** health priorities, barriers, perception, preference, Jazan, Saudi Arabia

## Introduction

The health status of populations can vary based on sociodemographic factors, environmental and behavioral risks, and the prevalence of diseases.<sup>1</sup> A health needs assessment of the population is an essential process to ensure the identification of major risk factors and causes of illnesses. This assessment is needed to initiate the actions required to address the health of populations while utilizing the preventive or curative healthcare services suitable for each particular population.<sup>2</sup> Furthermore, perception of illness seriousness can be a factor that influences adherence to preventive<sup>3</sup> and healthcare-seeking<sup>4,5</sup> behaviors.

An assessment of health status in Saudi Arabia indicates the presence of a high burden due to chronic noncommunicable diseases. The World Health Survey of Saudi Arabia 2019 provided a profiling of the health status of individuals residing in the country. The survey recruited a sample of 8912 individuals from all regions across the country, representing 0.02% of 32 million individuals living in Saudi Arabia.<sup>6</sup> The World Health Survey of Saudi Arabia assessed

the prevalence of various illnesses and correlated risk factors. According to the survey, the most prevalent chronic conditions in Saudi Arabia are hypertension (HTN), dyslipidemia, and diabetes, with equal prevalence among the recruited sample (8%).<sup>7</sup> The high prevalence of these conditions is due to the high frequency of associated risk factors, such as obesity, low physical activity, and unhealthy eating behavior, among the Saudis.<sup>8</sup>

The Saudi Arabian government recognizes the importance of integrating preventive and curative healthcare services to ensure comprehensive and effective healthcare delivery. Before 2020, most healthcare services were provided by a governmental establishment, where the Ministry of Health was the primary provider of healthcare in the country.<sup>9</sup> The Ministry of Health was responsible for over 62% of healthcare services provided in the country and the remaining was provided by other governmental and private establishments.<sup>10</sup> Recently, the Healthcare Sector Transformation Program has been announced as associated with the Saudi Arabian Vision 2030.<sup>11</sup> The program has several objectives, including, but not limited to, easier access to healthcare services, enhancing the value of healthcare services, and prevention against health threats.<sup>12</sup> Additionally, one of the main components of the transformation program is enhancing the contribution of the private sector and adopting the public–private partnerships to ensure meeting the health needs of residents in Saudi Arabia.<sup>13</sup>

Identifying these conditions early is essential, as patients affected by these illnesses can remain asymptomatic for extended periods until the appearance of symptoms or associated complications. Despite the high prevalence of chronic noncommunicable diseases in Saudi Arabia, there is no current nationwide program aiming to perform screening for HTN, diabetes, and dyslipidemia.<sup>14</sup> Additionally, individuals' perceptions of their health status, the seriousness of their diagnosed condition, and availability and barriers associated with their healthcare-seeking behavior can all influence the utilization of healthcare services and appropriate management and prevention of associated complications.<sup>15,16</sup>

The Saudi Health Interview survey included a nationwide sample of 10,735 participants in 2013 and assessed access and barriers to healthcare in the country. The survey was able to assess the impact of several demographic factors, such as age, education, and the presence of comorbidities, on the likelihood of being treated or being able to control the diagnosed HTN or diabetes. The survey findings indicated the importance of considering individual characteristics, such as age, education, and comorbidities—instead of focusing on system-based barriers—when addressing healthcare-seeking practices.<sup>17</sup>

The ongoing transition of the healthcare system in Saudi Arabia necessitates performing updates concerning healthcare-seeking behavior and related barriers among country residents. Currently, there is limited literature investigating the perceived illnesses, healthcare priorities, and healthcare service barriers in Saudi Arabia, especially after nearly seven years of announcing the Saudi Vision 2030 and the Healthcare Sector Transformation program. The current investigation aims to assess perceived healthcare priorities, healthcare service barriers, and preferences when selecting private or governmental healthcare services among a sample of a governmental university affiliates from Saudi Arabia.

## Methods

### Study Design and Settings

This study utilized a cross-sectional, analytical, design to reach a sample of Jazan University affiliates in the southwestern region of Saudi Arabia. The study targeted all university members, including students, teaching staff, healthcare staff, and administration. University affiliates can receive free healthcare services provided by the university hospital, and Ministry of Health healthcare facilities in the region. Additionally, the affiliates can receive healthcare services from the private sector healthcare services via utilizing their medical insurance or directly paying for the services.

Ethical approval to conduct the study was granted via the Standing Committee for Scientific Research of Jazan University (IRB approval number, REC-44/10/630; dated 03/05/2023). Recruitment of the study's participants was initiated after securing informed consent. All participations were voluntary, anonymous, and without any identification data collection. Additionally, the study was performed in accordance with the Declaration of Helsinki.

### Data Collection Tool

Data were collected via a structured questionnaire that measured demographic and clinical variables and other characteristics related to healthcare-seeking behavior. The questionnaire was developed after consulting the literature

concerning performing health needs assessment of communities.<sup>2,18</sup> The demographic variables involved asking the participants about their age, gender, nationality, spoken languages, employment status, social status, income level, residence area, family housing type, and relevant lifestyle characteristics, such as body mass index, smoking, and khat chewing. The clinical features were related to a family history of chronic diseases, cause of death among family members, and diagnosis with communicable or noncommunicable diseases. The section measuring healthcare-seeking behavior was related to the preferred location of seeking healthcare, frequency of visiting a healthcare service provider for a dentist or other medical reasons, frequency of routine checkups, and regularity of lifestyle counseling. The participants were also asked about their perception of the most critical illnesses in their community, the most important healthcare services, and the healthcare service delivery barriers. The participants were able to select the following options as healthcare service delivery barriers; availability of appointment, time limitations, cost of healthcare, awareness about service, lack of transportation, lack of trust, fear of stigma, inability to navigate healthcare system, lack of health insurance coverage, lack of child care, language barriers, and others.

## Data Collection Process

Data were collected during personal interviews. The interviews were performed by trained medical students. The developed questionnaire was available in Arabic and English versions and was completed by the medical students during the interviews. The targeted sample was identified and approached in the usual working or studying settings on the university campus. Those who had agreed to participate completed the recruitment process. The study targeted university affiliates only, so any university non-affiliates were excluded.

Sampling of the current investigation was performed via multistage sampling. The first sampling stage was performed via equal distribution of the data collectors on male and female campuses. Second, data collectors were distributed to collect data from all university faculties. Participants were then approached during the final stage of the sampling.

Sample size estimation was based on the sample size formula for cross-sectional design,<sup>19</sup>  $N = [z^2 p(1 - p)]/d^2$ , where  $N$  is the initial sample size,  $p$  is the anticipated population proportion under study (selected at a level of 50% to generate the largest sample size to measure the sample characteristics),  $z^2$  is the confidence level (determined at 95% confidence level), and  $d$  is the precision required (chosen at a level of 2%). The resulting sample size was 2401 participants and increased to 3001, assuming a non-response rate of 25%. Since the Jazan University affiliates were mostly students, nearly half of the sample were students, while the remaining half was distributed among administrative and healthcare staff and faculty members.

## Data Analysis

Data analysis was performed using R software (version 4.2.3) to investigate the factors influencing participants' preferences for healthcare services, categorized as governmental or private. The sociodemographic characteristics of the sample included age, gender, nationality, language, employment, social status, income, residence, and housing. Additionally, lifestyle choices, such as smoking behavior and khat use, were considered. BMI was estimated via dividing the weight in kilograms by squared height in meters. Categorization of the BMI was performed in accordance with the WHO guidelines as underweight, normal weight, overweight, and obese.<sup>20</sup> Medical histories covered family histories of diabetes mellitus (DM), HTN, cardiovascular diseases (CVDs), dyslipidemia, and cancer, as well as occurrences of deaths in the family due to CVDs, road traffic accidents (RTAs), and cancer. The health profile of participants was assessed by examining the prevalence of various diagnoses, including DM, HTN, CVDs, dyslipidemia, cancer, sickle cell disease, thalassemia, obesity, asthma, dental conditions, mental health, disability, maternity conditions, hepatitis B, hepatitis C, HIV, tuberculosis, malaria, and dengue fever. Additionally, participants' healthcare-seeking behavior was identified by analyzing their preferred locations for healthcare services, frequency of visits to dentists and physicians, routine checkups, and lifestyle counseling.

To evaluate the relationship between these variables and participants' preferences for healthcare services, the data were stratified by preference for governmental or private healthcare. Sample characteristics were presented using frequency tables and proportions for categorical variables and mean  $\pm$  SD for quantitative variables. The chi-squared test was employed to examine the association between categorical variables and healthcare preferences, while a two-sample  $t$ -test was used to

assess mean differences in numeric variables between those preferring governmental versus private healthcare. Statistical significance was determined with a threshold  $p$ -value below 0.05, providing insights into the factors influencing participants' healthcare service preferences.

## Results

Table 1 provides an overview of the sociodemographic characteristics of the study sample ( $n = 3083$ ). The mean age of the participants was  $28 \pm 11$  years. The gender distribution shows that 1552 (49.66%) were males and 1531 (50.34%)

**Table 1** Sociodemographic Characteristics of the Participants

Characteristics	Mean $\pm$ SD / Frequency (%)
<b>Age</b>	28 $\pm$ 11 years
<b>Gender</b>	
Male	1552 (49.66%)
Female	1531 (50.34%)
<b>Nationality</b>	
Saudi	2737 (89%)
Indian	118 (4%)
Egyptian	103 (3%)
Sudanese	69 (2%)
Other	56 (2%)
<b>Languages</b>	
Arabic	2880 (93%)
Other languages	203 (7%)
<b>Employment</b>	
Faculty member	516 (17%)
Administrative	576 (19%)
Healthcare workers	34 (1%)
Students	1957 (63%)
<b>Social status</b>	
Single	1987 (64%)
Married	1009 (33%)
Divorced/widowed	87 (3%)
<b>Income (Saudi Riyal)</b>	
"Less than 5000"	1312 (43%)
"5000–9999"	659 (21%)
"10,000–14,999"	610 (20%)
" $\geq 15,000$ "	502 (16%)

(Continued)

**Table 1** (Continued).

Characteristics	Mean $\pm$ SD / Frequency (%)
<b>Residence</b>	
Rural	1308 (42%)
Urban	1775 (58%)
<b>Family housing</b>	
Owned apartment	675 (22%)
Owned traditional	628 (20%)
Owned Villa	1041 (34%)
Rented	739 (24%)
<b>Use of health insurance</b>	
Always	269 (9%)
Usually	237 (8%)
Sometimes	2122 (69%)
Rarely/never	455 (15%)
<b>BMI Categories*</b>	
Underweight (BMI below 18.5)	431 (14%)
Normal weight (BMI ranging from 18.5 to 24.9)	1451 (48%)
Overweight (BMI between 25 and 29.9)	799 (26%)
Obese (BMI above 30)	371 (12%)
<b>Smoking behaviour**</b>	
Never	2540 (82%)
Ex-smoker	116 (4%)
Current	232 (8%)
Passive	195 (6%)
<b>Khat use</b>	
Never	2925 (95%)
Ex-user	96 (3%)
Current	62 (2%)

**Notes:** \*BMI: Body Mass Index (WHO guidelines). \*\*"Never" refers to an individual who has never smoked, while an "ex-smoker" is someone who used to smoke but has quit. A "passive smoker" is an individual who is exposed to cigarette smoke from others.

were females. In terms of nationality, the majority of participants were Saudis (89%). Arabic was the primary language of the participants, encompassing 2880 individuals (93%), while 203 individuals (7%) spoke other languages. The occupational categories included faculty members (17%), administrative staff (19%), healthcare professionals (1%), and students, comprising the largest group (63%). Social status indicates that 1987 (64%) of the participants were single, 1009 (33%) were married, and 87 (3%) were divorced or widowed. Regarding income, majority of the sample reported

an income of less than 10,000 SAR (64%). Residence was divided between rural (42%) and urban (58%). Majority of the respondents (76%) indicated living in housing owned by the family while only 24% reported living in rented units. Most participants reported occasional use of health insurance (69%). Body-mass-index categories included underweight (14%), normal weight (48%), overweight (26%), and obese (12%). The majority of participants were neither smoker nor khat users (82%, 95%, respectively).

Table 2 provides an overview of the participants' family history of diseases and causes of death (n = 3038). Nearly half of the participants (48%) reported a family history of DM, 45% HTN, 13% CVDs, and 4% dyslipidemia. Regarding causes of death, 10% of participants experienced a family member's death due to CVDs, 14% RTAs, and 12% cancer.

In terms of participants' health profile, 8% reported a diagnosis of DM, 7% HTN, 1% CVDs, and 1% dyslipidemia. Additionally, 1% reported a diagnosis of cancer, 3% had sickle cell disease, and 0.45% underwent thalassemia. Obesity was diagnosed in 5% of participants, while 8% reported asthma. Dental conditions were prevalent in 14% of participants, mental health conditions in 3%, and a disability diagnosis in 1%. Among female participants (n = 1552), 4.12% had a maternity-related diagnosis. The prevalence of infectious diseases was low, with 0.26% having hepatitis B, 0.13% with hepatitis C, 1% having HIV, 0.32% with tuberculosis, 2% having malaria, and 3% with dengue fever. The details of the findings are shown in Table 3.

**Table 2** Medical History and Cause of Death Among Families of the Participants

Characteristics	Frequency (%)
Diabetes mellitus	1479 (48%)
Hypertension	1373 (45%)
Cardiovascular disease	398 (13%)
Dyslipidemia	115 (4%)
Cancer	317 (10%)
Death due to cardiovascular disease	304 (10%)
Death due to road traffic accident	434 (14%)
Death due to cancer	359 (12%)

**Table 3** Prevalence of Diagnosed Medical Conditions Among the Participants

Characteristics	Frequency (%)
Diabetes mellitus	247 (8%)
Hypertension	223 (7%)
Cardiovascular disease	40 (1%)
Dyslipidemia	33 (1%)
Cancer	19 (1%)
Sickle cell disease	81 (3%)
Thalassemia	14 (0.45%)
Obesity	153 (5%)
Asthma	259 (8%)

(Continued)

Table 3 (Continued).

Characteristics	Frequency (%)
Dental conditions	436 (14%)
Mental condition	92 (3%)
Disability	21 (1%)
Maternity conditions (n=1552)	64 (4.12%)
Hepatitis B	8 (0.26%)
Hepatitis C	4 (0.13%)
HIV	23 (1%)
Tuberculosis	10 (0.32%)
Malaria	56 (2%)
Dengue fever	89 (3%)

Perceptions of the sample concerning most critical important health issues, most important healthcare services, and most important healthcare barriers are displayed in Figures 1–3. Figure one shows that the most important perceived health condition among the sample is diabetes. Figure two shows that the most important perceived healthcare services among the sample were primary healthcare followed by emergency services. Finally, figure three shows the most important perceived healthcare barriers among the sample, where availability of appointment, and long waiting times, were most important reported barriers.

Regarding participants' approaches to healthcare services and preferences, most participants (62.7%) preferred governmental healthcare services, while 37.3% opted for private-sector services. Regarding dental care, 16% of the participants visited dentists every six months, 13% once a year, 50% only when needed, and 21% rarely or never. For physician visits, 12% attended every six months, 8% once a year, 66% only when needed, and 14% rarely or never. Routine checkups were conducted in 14% of the participants every six months, 14% once a year, 40% only when needed, and 32% rarely or never. Lifestyle counseling was reported as always by 7%, usually by 22%, sometimes by 9%, and rarely or never by 61% of the participants. The detailed findings are presented in Table 4.

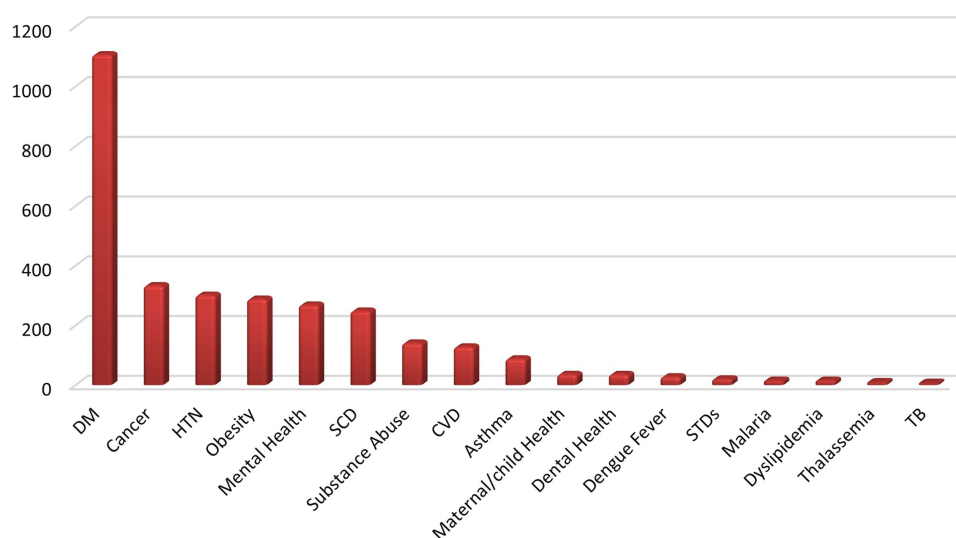
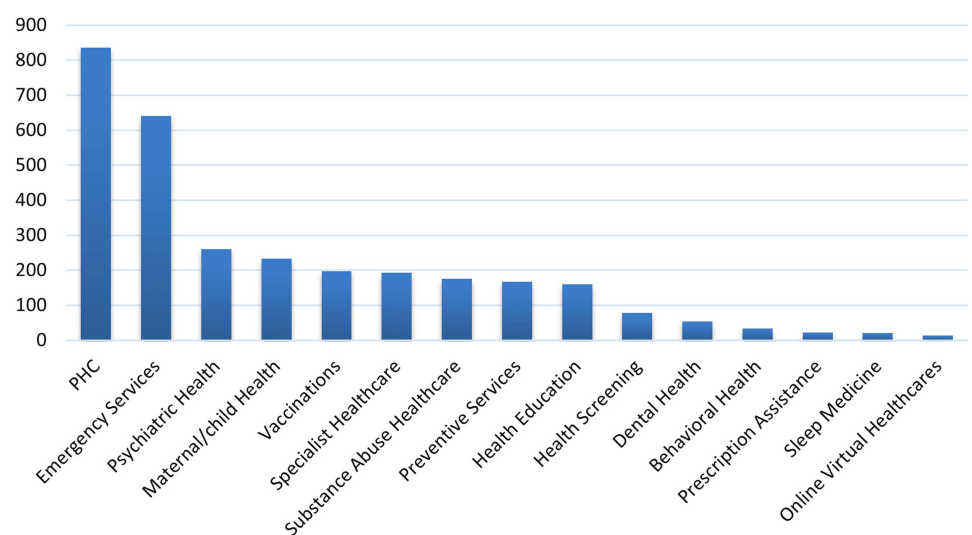
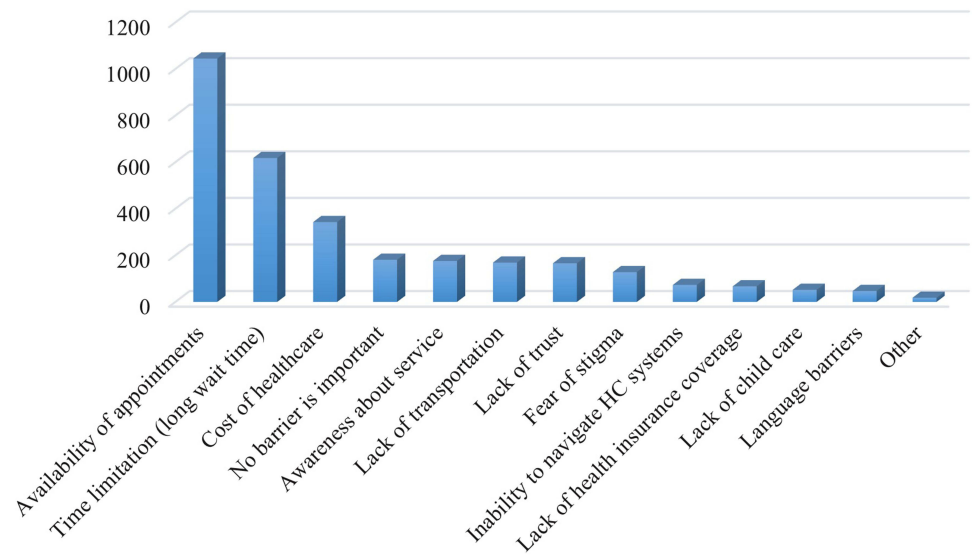


Figure 1 Perception of the most critical health issues among participants.





**Figure 2** Perception of the most important healthcare services among participants.



**Figure 3** Perception of the most important healthcare barriers among participants.

The preference for healthcare services (governmental vs private) was significantly associated with several socio-demographic and health-related factors. Participants who preferred private healthcare services were more likely females ( $p < 0.01$ ), non-Saudi ( $p < 0.01$ ), and non-Arabic speakers ( $p < 0.01$ ). Additionally, those who preferred private healthcare had a higher income ( $p < 0.01$ ) and were more likely to live in owned villas ( $p < 0.01$ ) compared with those who favored governmental healthcare. Furthermore, individuals who reported frequent dental visits ( $p < 0.01$ ) and routine checkups ( $p < 0.01$ ) every six months were more inclined toward private healthcare. These findings highlight the influence of sociodemographic and health-related factors, as well as specific healthcare-seeking behaviors, on the preference for either governmental or private healthcare services among the studied participants. The rest of the findings are displayed in [Table 5](#).



**Table 4** Healthcare-Seeking Behavior Among the Participants

Characteristics	Frequency (%)
<b>Preferred location to receive healthcare services</b>	
Governmental	1933 (62.7%)
Private sector	1150 (37.3%)
<b>Frequency of dentists' visits</b>	
Every 6 months	491 (16%)
Once a year	396 (13%)
Only when needed	1543 (50%)
Rarely/never	653 (21%)
<b>Frequency of physicians' visits</b>	
Every 6 months	364 (12%)
Once a year	260 (8%)
Only when needed	2022 (66%)
Rarely/never	437 (14%)
<b>Routine checkup</b>	
Every 6 months	438 (14%)
Once a year	418 (14%)
Only when needed	1232 (40%)
Rarely/never	995 (32%)
<b>Lifestyle counseling</b>	
Always	228 (7%)
Usually	687 (22%)
Sometimes	273 (9%)
Rarely/never	1895 (61%)

**Table 5** A Comparison of the Sample Characteristics According to the Preference for a Healthcare Service Provider Among the Participants

	Governmental		Private		P value
	N	Mean (SD) / Proportion	N	Mean (SD) / Proportion	
<b>Age</b>	1933	28 (11)	1150	28 (9.9)	> 0.05
<b>Gender</b>	1933		1150		< 0.01
Male	1057	55%	474	41%	
Female	876	45%	676	59%	

(Continued)

**Table 5** (Continued).

	Governmental		Private		P value
	N	Mean (SD) / Proportion	N	Mean (SD) / Proportion	
<b>Nationality</b>	1933		1150		<b>&lt; 0.01</b>
Saudi	1673	87%	1064	93%	
Egyptian	77	4%	26	2%	
Indian	89	5%	29	3%	
Sudanese	57	3%	12	1%	
Other	37	2%	19	2%	
<b>Language</b>	1933		1150		<b>&lt; 0.01</b>
Arabic	1785	92%	1095	95%	
Other Languages	148	8%	55	5%	
<b>Employment</b>	1933		1150		<b>&gt; 0.05</b>
Faculty staff	334	17%	182	16%	
Administrative	345	18%	231	20%	
Healthcare Worker	21	1%	13	1%	
Student	1233	64%	724	63%	
<b>Social Status</b>	1933		1150		<b>&gt; 0.05</b>
Single	1266	65%	721	63%	
Divorced/Widow/er	48	2%	39	3%	
Married	619	32%	390	34%	
<b>Income</b>	1933		1150		<b>&lt; 0.01</b>
Less than 5000 riyals	855	44%	457	40%	
5000 to 9999 riyals	422	22%	237	21%	
10,000–14,999 riyals	391	20%	219	19%	
15,000 and above riyals	265	14%	237	21%	
<b>Residence</b>	1933		1150		<b>&gt; 0.05</b>
Rural	827	43%	481	42%	
Urban	1106	57%	669	58%	
<b>Family housing</b>	1933		1150		<b>&lt; 0.01</b>
Rented	497	26%	242	21%	
Owned apartment	413	21%	262	23%	
Owned-traditional	440	23%	188	16%	
Owned villa	583	30%	458	40%	

(Continued)

**Table 5** (Continued).

	Governmental		Private		P value
	N	Mean (SD) / Proportion	N	Mean (SD) / Proportion	
<b>Use of health insurance</b>	1933		1150		<b>&lt; 0.01</b>
Always	144	7%	125	11%	
Usually	134	7%	103	9%	
Sometimes	1341	69%	781	68%	
Rarely/never	314	16%	141	12%	
<b>Diagnosis with any health condition</b>	1933		1150		<b>&gt;0.05</b>
No	1355	70%	813	71%	
Yes	578	30%	337	29%	
<b>Diagnosis with a non-communicable disease</b>	1933		1150		<b>&gt;0.05</b>
No	1403	73%	853	74%	
Yes	530	27%	297	26%	
<b>Diagnosis with communicable diseases</b>	1933		1150		<b>&gt;0.05</b>
No	1819	94%	1087	95%	
Yes	114	6%	63	5%	
<b>Presence of a CVDs risks (DM, HTN, dyslipidemia, and obesity)</b>	1933		1150		<b>&lt;0.05</b>
No	1579	82%	976	85%	
Yes	354	18%	174	15%	
<b>Frequency of dentists' visits</b>	1933		1150		<b>&lt; 0.01</b>
Every 6 months	263	14%	228	20%	
Once a year	245	13%	151	13%	
Only when needed	969	50%	574	50%	
Rarely/never	456	24%	197	17%	
<b>Frequency of physicians' visits</b>	1933		1150		<b>&lt; 0.05</b>
Every 6 months	210	11%	154	13%	
Once a year	167	9%	93	8%	
Only when needed	1259	65%	763	66%	
Rarely/never	297	15%	140	12%	
<b>Frequency of routine checkups</b>	1933		1150		<b>&lt; 0.01</b>
Every 6 months	248	13%	190	17%	
Once a year	250	13%	168	15%	
Only when needed	780	40%	452	39%	
Rarely/never	655	34%	340	30%	

(Continued)

**Table 5** (Continued).

	Governmental		Private		P value
	N	Mean (SD) / Proportion	N	Mean (SD) / Proportion	
<b>Frequency of lifestyle counseling</b>	1933		1150		> 0.05
Always	142	7%	86	7%	
Usually	444	23%	243	21%	
Sometimes	167	9%	106	9%	
Rarely/never	1180	61%	715	62%	

**Notes:** Bold P values indicate the presence of statistically significant difference.

**Abbreviations:** SD, standard deviation; DM, diabetes mellitus; HTN, Hypertension; CVD, cardiovascular disease.

# Discussion

The current study utilized a cross-sectional design to assess perceived healthcare priorities, barriers, and preferences when choosing private or governmental healthcare services among a sample from southwest Saudi Arabia. The most frequently perceived healthcare priority was diabetes. The healthcare-seeking behavior of the sample indicated a higher preference for governmental healthcare services and a higher frequency of visiting a dentist in comparison with physicians but lower rates of using routine checkups and lifestyle counseling services. When the participants were asked about the most notable healthcare barriers, the majority indicated that the most important setbacks were related to the availability of appointments, long waiting times when visiting a healthcare facility, and healthcare costs.

The current study's findings can be compared with similar local and international literature. The sample of the current study indicated a high demand for primary healthcare in comparison with other medical counterparts. This indicates the importance of enhancing primary healthcare to meet the current demand. In a review assessing primary healthcare concerning the ongoing transition, it was indicated that the transition should focus on improvements related to financing and infrastructure to ensure equitable access to healthcare and meet the growing burden induced by the rise in chronic disease prevalence.<sup>21</sup> This notion is supported by the perceived importance of chronic diseases, such as diabetes and HTN, among the current sample, which emphasizes the role of primary healthcare in the region.

Perceived healthcare priorities can vary among populations or even sections of the same community. For example, in a study that targeted a sample of university students from the United States, it was concluded that the students identified mental health as a primary concern over other chronic diseases.<sup>22</sup> However, in another study that assessed the perception of mayors in the United States, it was reported that the mayors viewed obesity, chronic diseases, drug addiction, and healthcare access as critical health issues in their cities.<sup>23</sup>

When the participants of the current study were asked about the most vital medical conditions, the condition perceived as most important was diabetes, followed by cancer, hypertension, and obesity. It is possible to argue that the perception of the current sample about the burden of chronic noncommunicable diseases in the country can be associated with the raised prevalence of these conditions, and the effort of the governmental establishments in raising awareness about prevention through lifestyle modification. In a study that assessed prevalence of chronic diseases among a sample of 24,012 household from Saudi Arabia, it was reported that most prevalence chronic diseases were diabetes mellitus, hypertension, cardiovascular diseases, and cancer.<sup>24</sup> Additionally, the Saudi Ministry of Health developed an awareness platform for most important health conditions in the country where lifestyle factors associated with chronic noncommunicable diseases are targeted including healthy eating habits, physical activity, obesity control and weight loss, and smoking cessation.<sup>25</sup>

Similarly, another review that evaluated primary healthcare reform in Saudi Arabia indicated that the current reform has increased the rate of primary healthcare visits, enhanced the coverage in rural communities, and improved screening for prevalent chronic conditions. Nonetheless, the review also highlights the importance of improving services required

for cultural and lifestyle behavior modification and the value of promoting intersectoral collaboration.<sup>26</sup> This is supported by the current study's findings, whose sample indicated the importance of primary healthcare services and the perceived seriousness of diabetes as a chronic disease yet low utilization or consideration of lifestyle counseling services.

In addition, concerning the use of health insurance among the sample, this study's findings highlighted low dependence on health insurance when seeking healthcare. The decreased use of health insurance in the current investigation is expected since the study was performed on a governmental university campus. In a nationwide study conducted by Al-Hanawi et al, which recruited a sample of 8845 in 2018, nearly 35% of the sample were insured, most of whom were insured via their private sector employers (88%).<sup>27</sup> Al-Hanawi et al concluded that having health insurance improved routine medical checkups for HTN, diabetes, and cholesterol. Although the current study did not consider health insurance when identifying the participants' healthcare-seeking behavior, routine medical checkups in the sample were more frequently reported in private settings than in governmental ones. This may indicate the difficulty concerning routine medical checkups in governmental settings and that holding health insurance may enhance routine checkup services utilization in the private sector.

More than 70% of the recruited sample of the current investigation reported either performing medical checkups when needed or rarely or never performing any routine checkups. This finding is consistent with a study conducted in community settings in Jazan, which measured knowledge and practices concerning routine medical checkups, where routine medical checkups were associated with the presence of a diagnosed medical condition. Furthermore, the study also reported that a country-wide campaign initiated by the Saudi Ministry of Health had rarely motivated Saudis to perform routine checkups for blood pressure, blood glucose, and obesity, suggesting low motivation among adults in the region to perform routine checkups.<sup>28</sup> These results are consistent with the findings of a review that assessed the effectiveness of screening programs in Saudi Arabia, indicating the importance of encouraging Saudis to adopt frequent routine medical checkups, especially with the rising prevalence of adults with raised blood pressure and blood glucose levels and impaired lipid profiles.<sup>14</sup>

The current study detected higher utilization of governmental healthcare services in comparison with services provided by the private sector, which can be explained by Saudi citizens' easier access to governmental services. This outcome is supported by the findings of a similar study conducted by Almaqhawi et al in Al-Hasa region, east of Saudi Arabia, where nearly 60% of 481 participants preferred governmental healthcare services. Although Almaqhawi et al did not assess variations of the sample characteristics based on the preferred settings when seeking healthcare, they reported that women were more likely to visit a healthcare facility than men.<sup>15</sup> The current study provided further assessment concerning gender's influence on preference for a particular healthcare service setting, where females reported higher utilization of the private sector in comparison with the governmental sector. Although this study did not provide a further explanation as to why women tend to prefer private healthcare services, it is possible to argue that the private sector might provide a more convenient healthcare service environment for females in comparison with the governmental counterpart. However, this notion is only suggestive and may require further investigation, especially when considering the cultural perspectives of Saudi Arabian society.

The current study's findings reported unavailability of medical appointments and prolonged waiting time in healthcare settings as notable healthcare service barriers among the recruited group. These findings concerning the use of healthcare services in the Jazan region have been shown in similar works, where ineffective interactions among primary, secondary, and tertiary healthcare levels were indicated as one reason for the limited appointments and prolonged waiting times to access healthcare.<sup>29</sup> Furthermore, a study that assessed access to healthcare in a Peruvian population indicated that prolonged waiting times to obtain a medical appointment and limited access to healthcare were major factors influencing perceptions of chronic diseases, especially during the COVID-19 pandemic.<sup>30</sup>

## Strengths and Limitations

The current study has multiple areas of strengths and limitations. The main strengths are related to the ability to recruit a relatively large sample of university affiliates with different demographic characteristics to present their perception of the most critical health issues. Identifying the main issues associated with illness perception, essential healthcare services, and barriers in the current community provides insight concerning healthcare service planners at the university

and in the region to focus on strengthening the role of primary healthcare, enhancing healthcare access, reducing waiting times, and developing preventive and curative services for chronic diseases. The main limitation of the current study is related to not seeking the illnesses perceptions of healthcare service providers and relevant stakeholders, which is an area for investigation in future research.

## Conclusion

This study found that the Jazan University affiliates perceived diabetes as the most critical health issue, while primary healthcare was reported as the most important healthcare service, followed by emergency services. Additionally, limited medical appointment availability and prolonged waiting times to access healthcare were the most notable healthcare barriers. Factors that were identified to be associated with the preference for using private healthcare services in comparison with governmental ones were related to gender, nationality, spoken language, economic factors, and health insurance. Higher utilization of private healthcare services was noted among participants who frequently visited dentists and physicians and those performing frequent routine medical checkups. Additionally, majority of the sample reported use of medical insurance. The findings provide insight for the healthcare service planners at the university or regional levels concerning the importance of strengthening the role of primary healthcare and promoting preventive and curative services for chronic diseases, such as diabetes. Additionally, enhancing access to and effectiveness of primary healthcare may reduce the impact of healthcare barriers associated with limited appointments and prolonged waiting times. Finally, the study indicates an area for further research concerning healthcare access barrier variations according to the type of healthcare settings, and use of medical insurance, especially with the ongoing transition and associated privatization of healthcare services in the country.

## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

## Disclosure

The authors report no conflicts of interest in this work.

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