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Patient Preferences for Non-Urgent Conditions: Primary Health Care Centers or Emergency Departments, in Saudi



Abstract: - Background: Many people are misusing the Emergency Department (ED) for non-urgent conditions instead of seeking care at Primary Health Care (PHC), making it difficult to treat actual crises quickly. This study aimed to determine whether the general public prefers PHC or ED in non-urgent situations and the factors affecting the decision.

Methods: A cross-sectional study was done on 1838 participants using an online questionnaire. Data about demographics, general knowledge and preference on PHC and ED were collected.

Results: 53.3% were females, 40.9% had an age of 18-23 years, 55.0% were single, 83% were Saudi, 40.1% were students and 34.8% had medical insurance. Of them, 74.7% and 77.1% knew the correct definition of the PHC and the ED respectively. The majority of the participants (81.7%) do not know the symptoms that demand an ED visit. The most commonly chosen symptom causing ED visits was broken bones or dislocated joints (67.4%) and 57% prefer to go to the PH. The most common barrier to visits the PHC was limited work hours (49.2%), and the most common for the ED was the crowding (53.2%). The overall satisfaction was better about the ED than the PHC. ED Preference was significantly higher among participants aged 24-29 years, non-Saudi, those with middle school education, unemployed, having medical insurance, among those who did not know the correct definition of either PHC or ED, among those who were aware of the symptoms that demand an ED visit and those having very good satisfaction about the ED.

Conclusion: According to the study, it was found that the majority of the population preferred visiting the PHC over the ED. While most of the population demonstrated good knowledge of the definitions of ED and PHC, a significant deficiency was identified in recognizing critical signs and symptoms that necessitate a visit to the ED. Therefore, public campaigns and awareness videos on social media platforms were recommended to educate the public about the optimal methods for accessing the healthcare system. The objective is to decrease the incidence of non-urgent cases in the ED.

Keywords: Primary Health Care, Emergency Department etc.

1. Introduction:

Primary healthcare centers (PHC) serve as the initial point of entry into the healthcare system for non-urgent conditions [1]. On the other hand, the Emergency Department (ED) delivers immediate care for life-threatening illnesses and injuries at medical facilities worldwide [2].

Saudi Arabia's 2030 vision in health care is aiming to make PHC the first entry to the health care system. Unfortunately, many people are going for the ED at first instead, due to the misconception that offers faster services than the PHC and different reasons for the others [3].

Studies from the United States, Canada, the United Kingdom, and Australia has all indicated that there is a significant rise in demand for ED services [4]. The frequency of ED visits in Saudi Arabia increased significantly from 9 million in 2000 to almost 18 million in 2009, according to analyses undertaken by the Saudi Ministry of Health in 2009 [5]. Many people are misusing the ED for non-urgent conditions rather than seeking care at PHC which makes it challenging to treat actual crises quickly.

This misuse could result in a deterioration in the quality of emergency services and an increase in associated costs [6]. According to the majority of studies, at least 30% of ED visits in the US are non-urgent [7]. According to research conducted in Jeddah, 53% of patients who went to the emergency room were non-urgent. A significant percentage of non-urgent patients not having sought care at PHC before going to the ED. Most non-urgent individuals believed that the ED was the first place to go if they were sick [8]. Furthermore, a study done in Riyadh found that factors affecting patients' choice to go to ED over PHC are the inability to schedule

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appointments, the distance to the PHC, extended waiting times, the sanitation of the centers, and the lack of preventive services [9].

Overcrowding, in particular has had detrimental effects that made the patient's result worse since staff members were unable to follow the treatment protocol [10]. In the ED, patient satisfaction has been linked to both the waiting time and the standard of care delivered by medical professionals [11]. Poor communication, distance from the PHC, waiting times, cleanliness of the centers, the absence of preventive treatments, and difficulties scheduling appointments are all variables that affect how satisfied patients are with the PHC [12].

Our study distinguishes itself from the above-mentioned studies by focusing on the general population's preferences in Makkah region. It is an important task to understand why the population chose ED over PHC so we can improve the services provided in the PHC to solve the overcrowding in ED. Our study was designed to assess whether the general population prefers PHC or ED in non-urgent conditions and why.

2. Subjects and methods

Study design, setting and time: a cross-sectional study was conducted in the three largest cities (Makkah, Taif, and Jeddah) in Saudi Arabia in the time from June to September 2023.

Study population: the inclusion criteria were people living in Makkah region, of both genders and adults (greater than or equal to 18 years old).

Sample size: the sample size was determined by Raosoft software (Raosoft Inc, Seattle, USA), with a margin of error of 3%, a confidence level of 97%, a population size of about 8.500.000, and a response distribution of 50%. The minimum recommended sample size was 1308.

Data analysis: data was statistically analyzed by SPSS version 27 and MS Excel (Microsoft 365 version), using numbers, percentages, charts, tables, and graphs. To assess the association between the variables, the Chisquared test (χ^2) was applied to qualitative data that was expressed as numbers and percentages. A p-value of less than 0.05. was considered statistically significant.

Data collection: The data were collected through an online questionnaire developed by the authors. The questionnaire drew inspiration from two existing research questionnaires [2,3] and underwent review by three emergency consultants. Then, a pilot study was conducted with a small sample size to ensure the validity and reliability of the questionnaires. The questionnaire was distributed through social media (whatsapp) by medical students. The questionnaire had four sections: the first section was about sociodemographic characteristics (gender, age, nationality, marital status, education, employment, residency, personal income, and medical insurance). The second section covered the knowledge of the participants (definitions of PHC and ED and awareness of critical signs and symptoms that need visiting the ED), and we calculated the awareness of critical signs and symptoms by giving the non-urgent conditions (-1) and the urgent conditions (+1). If the subject's overall score was more than 1, then he would be considered aware. The third section was about preference and the reasons behind it (number of ED and PHC visits, preference between ED and PHC in non-urgent conditions, and reasons preventing ED and PHC visits). The last section was about the satisfaction rate for both PHC and ED (Appendix 1).

Ethical considerations: The research ethics committee of Taif University, Saudi Arabia granted its clearance for the current work with an ethical approval number: (HAO-02-T-105).

3. Results

Sociodemographic characteristics

We collected a total of 1838 responses from those who completed the online questionnaire. Over half of the participants were female (979: 53.3%). Between 18 and 23 was the most common age group (752: 40.9%), and 55.0% were single. Most of the participants were Saudis (1526: 83.0%). The majority of the sample were students (736: 40.1%) with university education or above. Jeddah had the highest residency rate (717: 39.0%), and the most common personal income was less than \$5,000 (1009: 54.9%). Less than half of the sample has medical insurance (639: 34.8%). ED preference was significantly higher among participants aged 24-29 years, non-Saudi, those with middle school education, the unemployed, and those having medical insurance ($p < 0.05$) (Table 1)

Table 1: Participants' sociodemographic characteristics and their preferences between PHC and ED

Variable	Overall N (%) (n=1838)	Preference between PHC and ED		P-Value §
		PHC N (%) (n=1047)	ED N (%) (n=791)	
Gender				
Male	859 (46.7%)	471 (54.8%)	388 (45.2%)	0.084
Female	979 (53.3%)	576 (58.9%)	403 (41.1%)	
Age				
18-23	752 (40.9%)	439 (58.4%)	313 (41.6%)	0.013*
24-29	272 (14.8%)	139 (51.1%)	133 (48.9%)	
30-39	273 (14.9%)	160 (58.6%)	113 (41.4%)	
40-49	300 (16.3%)	154 (51.3%)	146 (48.7%)	
50-59	181 (9.8%)	114 (63.0%)	67 (37.0%)	
More than 60	60 (3.3%)	41 (68.3%)	19 (31.7%)	
Nationality				
Saudi	1526 (83.0%)	896 (58.7%)	630 (41.3%)	0.001*
Non-Saudi	312 (17.0%)	151 (48.4%)	161 (51.6%)	
Marital status				
Single	1011 (55.0%)	581 (57.5%)	430 (42.5%)	0.455
Married	731 (39.8%)	414 (56.7%)	317 (43.3%)	
Widow	62 (3.4%)	37 (59.7%)	25 (40.3%)	
Divorced	34 (1.8%)	15 (44.1%)	19 (55.9%)	
Education				
Uneducated	7 (0.4%)	1 (14.3%)	6 (85.7%)	0.048*
Elementary school	27 (1.5%)	13 (48.1%)	14 (51.9%)	
Middle school	42 (2.3%)	20 (47.7%)	22 (52.3%)	
High school	373 (20.3%)	203 (54.4%)	170 (45.6%)	
University or above	1389 (75.5%)	810 (58.3%)	579 (41.7%)	
Employment				
Unemployed	212 (11.5%)	105 (49.5%)	107 (50.5%)	0.002*
Student	736 (40.1%)	448 (60.9%)	288 (39.1%)	
Housewife	178 (9.7%)	101 (56.7%)	77 (43.3%)	
Employed	589 (32.0%)	312 (53.0%)	277 (47.0%)	
Retired	123 (6.7%)	81 (65.9%)	42 (34.1%)	
Residency				
Makkah	550 (29.9%)	315 (57.2%)	235 (42.8%)	0.133
Jeddah	717 (39.0%)	415 (57.9%)	302 (42.1%)	
Taif	436 (23.8%)	231 (53.0%)	205 (47.0%)	
Other	135 (7.3%)	86 (63.7%)	49 (36.3%)	
Personal income				
Less than 5000	1009 (54.9%)	578 (57.6%)	431 (42.4%)	0.665
5000 to 15000	551 (30.0%)	306 (55.5%)	245 (44.5%)	
More than 15000	278 (15.1%)	163 (58.6%)	115 (41.4%)	
Medical insurance				
Yes	639 (34.8%)	336 (52.6%)	303 (47.4%)	0.006*
No	1199 (65.2%)	711 (59.3%)	488 (40.7%)	

§ The p-value was calculated using the chi-square test, * Significant if the p-value <0.05, ED: Emergency department, PHC: Primary health care center.

Knowledge of the participants

Most of the participants know the correct definition of PHC (1373: 74.7%), and (1418: 77.1%) also know the correct definition of ED. As shown in Figure 1, the least commonly chosen symptom that causes visits to the ED is fatigue (168: 9.1%), and the most commonly chosen symptom is broken bones or dislocated joints (1238: 67.4%). The majority of the participants (1502: 81.7%) don't know the symptoms that demand an ED visit. ED

Preference was significantly higher among participants who did not know the correct definition of either PHC or ED, and among those who were aware of the symptoms that demand an ED visit ($p < 0.05$) (Table 2)

Table 2: Participants' knowledge and their preferences between PHC and ED.

Variable	Overall N (%) (n=1838)	Preference between PHC and ED		P-Value §
		PHC N (%) (n=1047)	ED N (%) (n=791)	
Definition of PHC				
The patient's first point of entry into the health care system and as the continuing focal point for all needed health care services +	1373 (74.7%)	839 (61.1%)	534 (38.9%)	0.000*
It's place for referral to specialized hospital without providing health care services	278 (15.1%)	119 (42.8%)	159 (57.2%)	
I don't know	187 (10.2%)	89 (47.6%)	98 (52.4%)	
Definition of ED				
Hospital facility that is staffed 24 hours a day, 7 days a week, and provides unscheduled outpatient services to patients whose condition requires immediate care +	1418 (77.1%)	846 (59.7%)	572 (40.3%)	0.000*
Hospital department that provides all types of medical services for critical and non-critical cases quickly and efficiently	349 (19.0%)	167 (47.9%)	182 (52.1%)	
I don't know	71 (3.9%)	34 (47.9%)	37 (52.1%)	
Symptoms causes visiting ED				
Participants are aware of the symptoms that demand an ED visit	336 (18.3%)	136 (40.5%)	200 (59.5%)	0.000*
Participants are unaware of the symptoms that demand an ED visit.	1502 (81.7%)	911 (60.7%)	591 (39.3%)	

§ The p-value was calculated using the chi-square test, * Significant if the p-value < 0.05 , + correct definition, ED: Emergency department, PHC: Primary health care center.

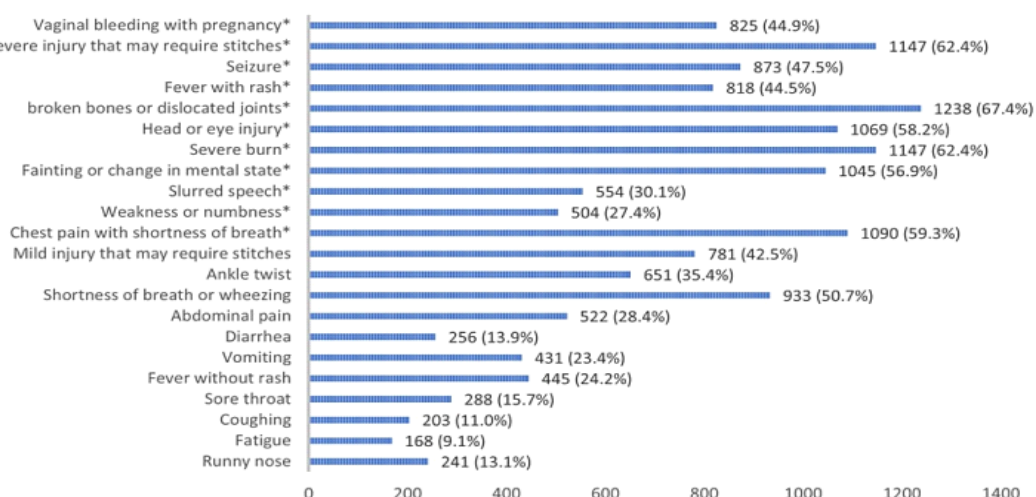


Figure 1: Presenting symptoms on visiting the ED

Data are presented in number and percentages, ED: Emergency department, * Symptoms demand visiting ED.

Preference and the reasons behind it

From the participants, 20.8% went to the PHC once, 54.7% went to the PHC more than once, and 24.5% didn't go to the PHC before. The ED visits were: 22.1% went to the ED once, 65.9% went to the ED more than once, and 12.0% hadn't visited the ED before. Out of the total responses, 339 didn't visit the PHC and 180 didn't

go to the ED before, so we didn't include them in the satisfaction rate, but we included their preference. Most of the participants prefer to go to the PHC (57.0%), as shown in figure 2. The most common reason preventing patients from visiting the PHC was limited work hours (49.2%), and the least common reason was mistreating patients (15.3%). And for the reasons preventing visiting the ED, the majority of the participants chose crowding (53.2%), and the minority of the participants chose an old and dilapidated ED or bad sanitation (8.8%). For more details about the preventing factors of both PHC and ED, check figures 3 and 4, respectively. We found a significant correlation between the preference and the following variables: PHC visits ($P=0.000$), ED visits ($P=0.001$), and reasons preventing ED visits ($P=0.003$). We didn't find correlation between preference and reasons preventing PHC visits ($P=0.066$).

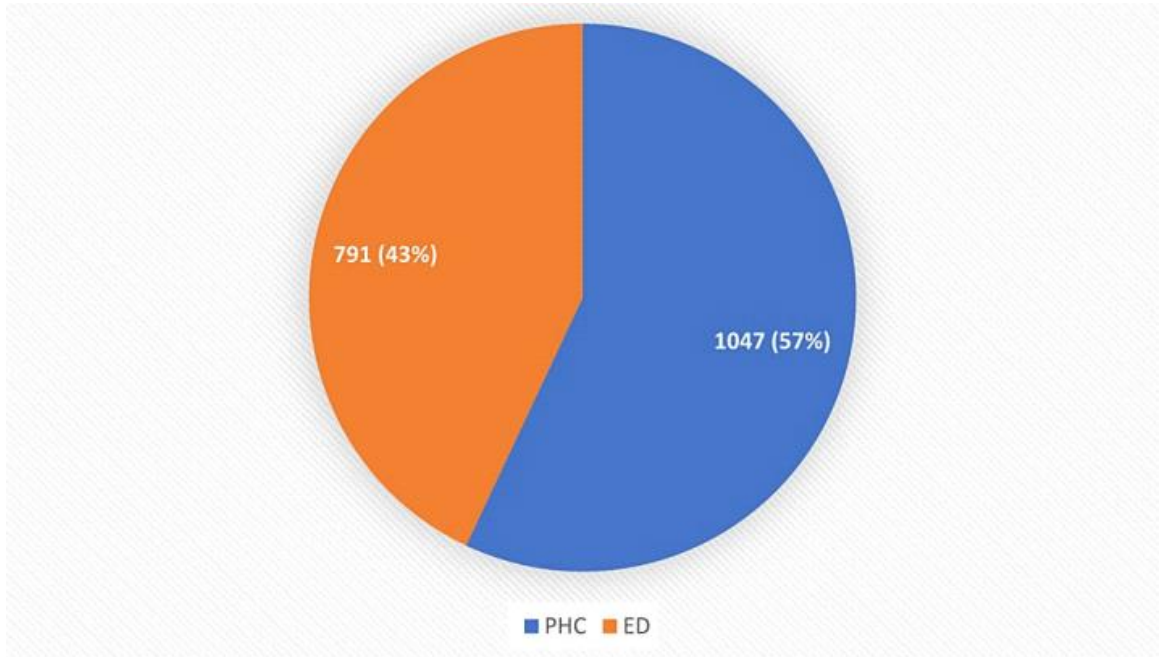


Figure 2: Preference rate between PHC and ED.

Data are presented in number and percentages

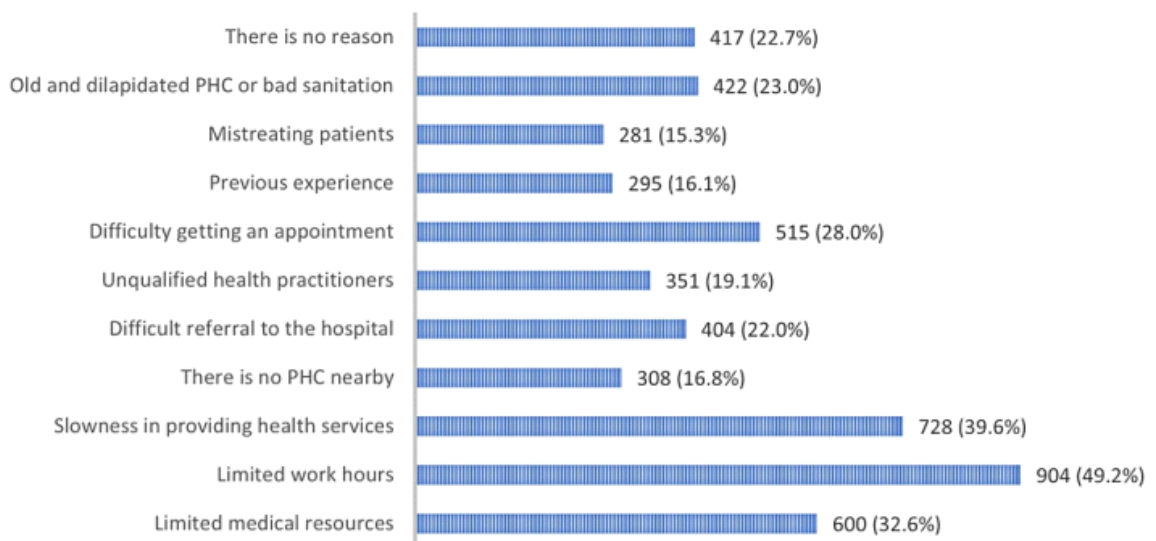


Figure 3. Barriers to visiting the PHC

Data are presented in number and percentages

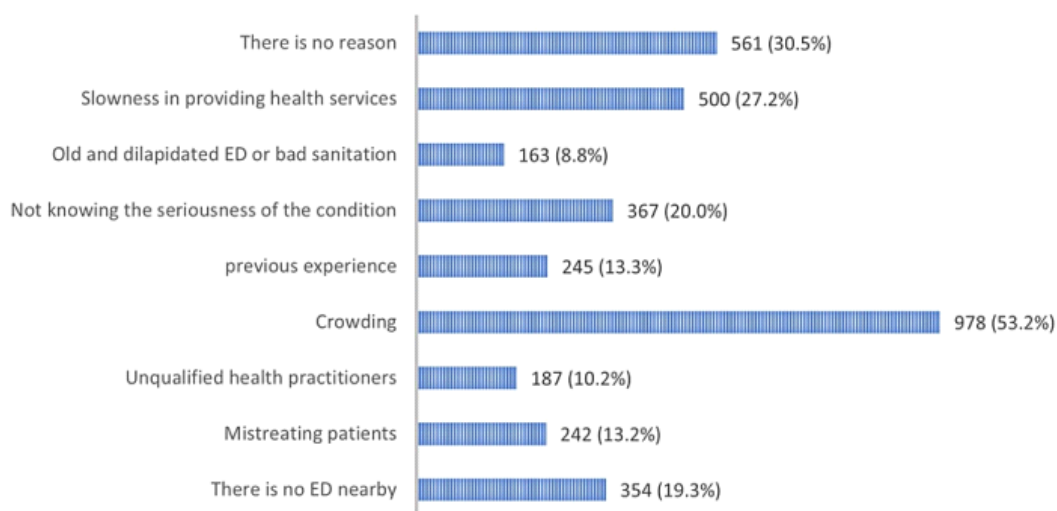


Figure 4. Barriers to visiting the ED

Data are presented in number and percentages

Satisfaction rate for both PHC and ED

As noted, we excluded 339 responses in the PHC satisfaction rate and 180 responses in the ED satisfaction rate because they had never visited them before. Of the participants, 35.7% had a good and very good satisfaction about the PHC, compared to 46% about the ED. Overall, the satisfaction rate was better in the ED than the PHC. Participant with ED reference had a significant higher percent of having very good satisfaction about the ED. At the same time, they had a significant lower percent of those having very good satisfaction about the PHC ($P < 0.05$).

Table 3. Satisfaction rate for both PHC and ED

Variable	Overall N (%) ⁽ⁿ⁼¹⁴⁹⁹⁾	Preference between PHC and ED		P-Value §
		PHC N (%) ⁽ⁿ⁼⁹²¹⁾	ED N (%) ⁽ⁿ⁼⁵⁷⁸⁾	
Satisfaction of PHC				
Very poor	126 (8.4%)	36 (28.9%)	90 (71.1%)	0.000*
Poor	174 (11.6%)	90 (51.7%)	84 (48.3%)	
Intermediate	664 (44.3%)	423 (63.7%)	241 (36.3%)	
Good	367 (24.5%)	248 (67.6%)	119 (32.4%)	
Very good	168 (11.2%)	124 (73.8%)	44 (26.2%)	
Variable	Overall N (%) ⁽ⁿ⁼¹⁶⁵⁸⁾	Preference between PHC and ED		P-Value §
		PHC N (%) ⁽ⁿ⁼⁹²¹⁾	ED N (%) ⁽ⁿ⁼⁷³⁷⁾	
Satisfaction of ED				
Very poor	100 (6.0%)	51 (51.0%)	49 (49.0%)	0.048*
Poor	147 (8.9%)	93 (63.3%)	54 (26.7%)	
Intermediate	647 (39.1%)	362 (56.0%)	285 (44.0%)	
Good	493 (29.7%)	282 (57.2%)	211 (42.8%)	
Very good	271 (16.3%)	133 (49.1%)	138 (50.9%)	

§ The p-value was calculated using the chi-square test, * Significant if the p-value <0.05, ED: Emergency department, PHC: Primary health care center.

Discussion

In our research, we conducted an extensive investigation into the healthcare preferences of the general population, with a specific focus on the selection between PHC and ED for non-urgent medical conditions in Makkah Region. Our study gathered a substantial dataset comprising 1838 responses, enabling us to gain valuable insights into the determinants of patient preferences and satisfaction levels concerning these healthcare facilities. It's worth noting that most of our survey participants fell into the category of young adults, primarily aged between 18 and 23, Saudi and were predominantly single. Additionally, the majority of respondents were students with

higher educational backgrounds, residents of Jeddah, and had a personal income of less than 5,000 SAR. An important observation was the low rate of medical insurance coverage among our sampled population.

Importantly, our analysis revealed a significant association between patient preferences and various sociodemographic factors, including age, nationality, education, employment, and medical insurance status. These findings underscore the role of these demographic variables in influencing the choice between PHC and EDs for non-urgent healthcare needs.

A noteworthy observation from a study by Almulhim et al. (2021) [3] is that the only significant sociodemographic factor associated with preference was gender, with females showing a preference for ED visits over PHC. Regarding education, our findings indicate a positive association between higher education levels and a preference for PHC visits, while the opposite trend was observed for ED preference. This aligns with the findings of a systematic review by Dawoud (2022) [1], who reported a similar relationship between education and non-urgent ED visits among two studies. Therefore, healthcare providers should invest in patient education initiatives to ensure that individuals have the necessary knowledge to make informed decisions regarding the appropriate healthcare facility for their needs.

It's noteworthy that a substantial percentage of our respondents lacked knowledge about the symptoms that warrant an ED visit. This knowledge gap could potentially impact healthcare-seeking behaviors and subsequently influence patient preferences. However, significant portion of our respondents exhibited a solid understanding of the definitions of both PHC and EDs. Likewise, in Almulhim et al., [3] study, the majority of participants could accurately define ED. It also highlights the critical role of patient education in shaping healthcare decision-making and the need for targeted educational campaigns to improve public awareness. Educating the population about the appropriate use of healthcare services can potentially alleviate overcrowding in EDs and reduce unnecessary healthcare costs.

Our study revealed variations in healthcare utilization patterns among participants. While a majority of respondents reported having visited both PHC and EDs on multiple occasions, a significant percentage had never sought care at either facility. Importantly, the reasons for not visiting these healthcare facilities varied significantly. Notably, our findings indicated that limited PHC operating hours emerged as the primary obstacle to accessing PHC, which aligns with the preferences of Almulhim et al., [3] study participants, who favored EDs due to quicker medical care and ease of access. In contrast, our study identified ED overcrowding as the primary reason for avoiding EDs. This observation underscores the significant association we noted between healthcare utilization patterns and patient preferences. To address the preferences of individuals with non-urgent conditions favoring PHC and alleviate ED overcrowding, it would be recommended that healthcare authorities contemplate extending PHC operating hours to better accommodate their needs.

Our study findings revealed that a majority of respondents expressed a preference for PHC over EDs when seeking non-urgent healthcare services. This aligns with the results of Almulhim et al., [3] study, which also reported a preference for PHC, although a minor variation was observed favoring ED among certain respondents in their study.

In our study, the suggested reasons for preferring PHC visits over ED visits are convenience, accessibility, and a perception of shorter waiting times at PHC. Conversely, ED overcrowding, a delay in offering medical care, and lacking awareness of serious conditions emerged as a significant deterrent for individuals when considering EDs for non-urgent conditions.

It is essential to highlight that our analysis uncovered a significant association between patient preferences and satisfaction rates. Interestingly, the overall satisfaction rate was higher for EDs than for PHC, despite the preference for PHC expressed by most respondents. This apparent paradox underscores the complexity of patient decision-making in healthcare choices, suggesting that factors beyond satisfaction alone play a substantial role in shaping preferences.

Further research in this area is crucial to continually monitoring patient preferences and assessing the impact of interventions aimed at addressing the identified issues. Subsequently, enhancing healthcare quality and patient satisfaction, reducing healthcare costs, and overcrowding, and optimizing outcomes.

Limitations

Our primary limitation lies in our inability to reach every demographic within the population using online questionnaire, including the elderly and individuals who may be illiterate. A limitation of the present study was the use of a self-reported questionnaire that could have a recall bias.

4. Conclusion

The majority of participants in the study prefer to go to the PHC (57.0%) in non-urgent conditions. Limited work hours were identified as the primary barrier to visiting PHC, while overcrowding was the most common obstacle to seeking care at the ED. Most participants accurately defined Primary Healthcare (PHC) and Emergency Department (ED). However, a remarkable finding was that 81.7% were unaware of which symptoms necessitated visiting the ED. The most commonly cited symptoms for choosing the ED for medical attention were broken bones or dislocated joints. Certain factors were associated with a higher preference for the ED. This included younger age, non-Saudi nationality, middle school education level, unemployment, possession of medical insurance, lack of knowledge about the correct definitions of PHC and ED, awareness of symptoms requiring an ED visit, and high satisfaction with the ED. The study suggests a need for public campaigns and awareness initiatives, through various means, particularly social media, to emphasize the roles of ED and PHC in the Saudi general population. Additionally, addressing obstacles to accessing PHC should be a priority for healthcare planners and policymakers.

Additional Information

Disclosures Human subjects: Consent was obtained or waived by all participants in this study. National Committee for Bioethics issued approval HAO-02-T-105. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work. **Acknowledgements** The authors gratefully acknowledge the cooperation of all study participants

Funding: None

Conflicts of interest: no conflicts related to this work

Consent for publication: Informed consent was obtained from all the participants

Ethical considerations: The research ethics committee of Taif University, Saudi Arabia granted its clearance for the current work.

Acknowledgments: The authors gratefully acknowledge the cooperation of all study participants.

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