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Patient's expectations of emergency department care in Saudi Arabia: A cross-sectional study

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ABSTRACT

Introduction: Patients of all categories come to the emergency room (ER) expecting the best treatment in the fastest amount of time. Nowadays emergency departments (EDs) no longer deal only with life saving patients. They are now the first point of contact for patients, not in the event of a catastrophe only. **Aim:** This study aimed to evaluate patients' expectations of emergency department care in Saudi Arabia and to explore emergency department patient expectations regarding staff communication with patients, wait times, the triage process and information management. **Method:** This is a cross-sectional study conducted among patients who visited EDs between March 2022 and May 2022 in Saudi Arabia. A self-administrated electronic questionnaire was distributed among the targeted patients. The questionnaire includes socio-demographic characteristics (i.e., age, gender, education, etc.) and perceptions toward emergency departments. **Results:** 1866 patients met the inclusion criteria (54.6% females vs. 45.4% males). 38.7% were aged between 18 and 25 years. Almost 90% believed it is important or very important to have information about ER functions. In a multivariate regression model, having a bachelor's or higher degree, living in the western part of Saudi Arabia, knowing that some patients can be admitted to the ER before others and knowing that it is fair were the independent significant predictors of giving high importance to having information about ER functions. **Conclusion:** Patients with better education and perception of EDs are more likely to care about emergency department functions.

Keywords: Emergency department, expectation, satisfaction, Saudi Arabia

1. INTRODUCTION

An emergency department is a part of a hospital that provides prompt surgical and medical services to patients in need of immediate care. Medical emergency doctors treat patients of all ages, from men to women, from children to adults. They treat diseases and conditions relating to neurology,

cardiology, pulmonology, renal and gastrointestinal issues also deal with psychiatric patients and others. The emergency department (ED) is the point of entry for patients in the hospital. Patients of all kinds come to the emergency room expecting the best treatment in the fastest amount of time (Alsharif et al., 2023); nowadays, EDs no longer deal only with emergencies. They have become initial point of interaction with patients, not just for catastrophic events. In the hospital ER, patients with minor ailments also visit. However, measuring and ensuring patient satisfaction with the performance of healthcare services is needed. It is about identifying the success of healthcare organizations (Manzoor et al., 2019).

Therefore, a prospective cohort study was done by Abolfotouh et al., (2017) to estimate the patients' satisfaction level and its correlation with various socio-demographic and healthcare characteristics in the emergency department, as well as to distinguish the patients' satisfaction predictors. The study showed that 32.8% were highly satisfied while 26.7% were unsatisfied. Additionally, the study shows that the lower satisfaction level was significant in males, waiting time and their perception of their health status after admission compared to before (Cooke et al., 2006). In a previous study in 2017, patients identified their ED expectations. The patients anticipated being informed of the expected waiting time and being seen by a physician within a reasonable amount of time. Hence, the process and management will be done in a prompt and well-organized manner and the ED staff will be cooperative, helpful and caring (Mohamed et al., 2014).

The negligence or incompetence of the previous patients' expectations will lead to a lack of adequate health care. This study aimed to evaluate patients' expectations of emergency department care in Saudi Arabia. Also, to evaluate patient expectations in the emergency department regarding healthcare providers interactions with patients, the triage process, wait times and information management.

2. METHODOLOGY

A cross-sectional study was conducted in Saudi Arabia from March 2022 to May 2022. After obtaining approval from the institutional review board (IRB) of the Al-Ahsa health cluster, to assess patients expectations of emergency department care in Saudi Arabia. The data was collected using a simple random sampling technique. All patients who visited the emergency department and gave their consent to participate in the study were interviewed using a semi-structured questionnaire. A literature review was done to help the authors in developing this questionnaire, which had been pretested using a pilot study and edited accordingly. The questionnaire includes two sections: The first focuses on socio-demographic characteristics (age, gender, occupation and educational level); the second focuses mainly on their knowledge about patients' expectations in the emergency department regarding healthcare provider's interactions with patients, the triage process, wait times and information management.

Statistical analysis

Descriptive statistics were summarized as numbers and percentages. The relationship between the knowledge about the importance of emergency department functions and the socio-demographic characteristics of the patients has been calculated using the Chi-square test. Significant results were then tested in a multivariate regression model to determine the independent significant predictor of the importance of having information about emergency department functions with a corresponding odd ratio and a 95% confidence interval. A P-value of 0.05 was considered statistically significant. The data were analyzed using Statistical Packages for Social Sciences (SPSS) version 26 (Armonk, NY: IBM Corp., USA).

3. RESULTS

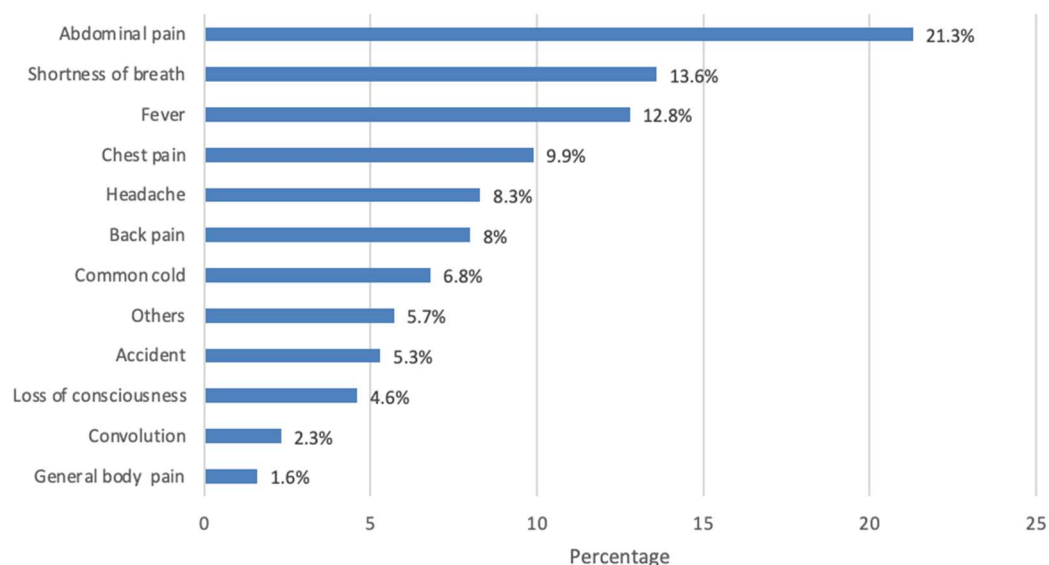
In total, 1866 patients were able to complete the survey. Table 1 presented the socio-demographic characteristics of the patients. The most common age range was 18 to 25 years old (38.7%), with more than half (54.6%) being females. Bachelor's degree holders made up 67.8% of the population and 53.4% were currently employed. Saudi nationality constitutes most of the patients (88.5%). With respect to marital status, 51.9% were married. In addition, 28.7% were living in the Eastern region (Table 1).

In Figure 1, the most frequent problem leading patients to emergency visits was abdominal pain (21.3%), followed by shortness of breath (13.6%) and fever (12.8%).

In Figure 2, nearly half of the patients (49.8%) believed that having information about how the emergency department functions and how to reach a primary care doctor is important, while 40.1% thought it was very important.

Table 1 Socio-demographic characteristics of the patients (n=1866)

Study variables	N (%)
Age group	
18 – 25 years	722 (38.7%)
26 – 35 years	613 (32.9%)
36 – 45 years	316 (16.9%)
>45 years	215 (11.5%)
Gender	
Male	848 (45.4%)
Female	1018 (54.6%)
Educational level	
Primary school or below	59 (03.2%)
Middle school	52 (02.8%)
High school	330 (17.7%)
Bachelor degree	1265 (67.8%)
Postgraduate	160 (08.6%)
Occupational status	
Employed	997 (53.4%)
Unemployed	869 (45.6%)
Nationality	
Saudi	1651 (88.5%)
Non-Saudi	215 (11.5%)
Marital status	
Single	898 (48.1%)
Married	968 (51.9%)
Place of residence	
Northern Region	303 (16.2%)
Western Region	418 (22.4%)
Central Region	445 (23.8%)
Southern Region	165 (08.8%)
Eastern Region	535 (28.7%)

**Figure 1** Main problem leading to emergency visit

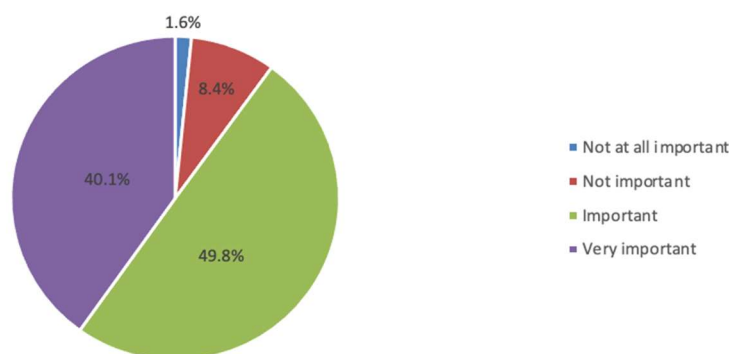


Figure 2 Importance of having information about how the emergency department functions and how to reach a primary care doctor

In Figure 3, most of the patients believed that medical screening test results carried out in the ER department should be provided to patients in approximately 30 minutes, including X-rays (67%), consultation with another doctor (50.2%), lab results (47.1%) and a CT scan (45.3%).

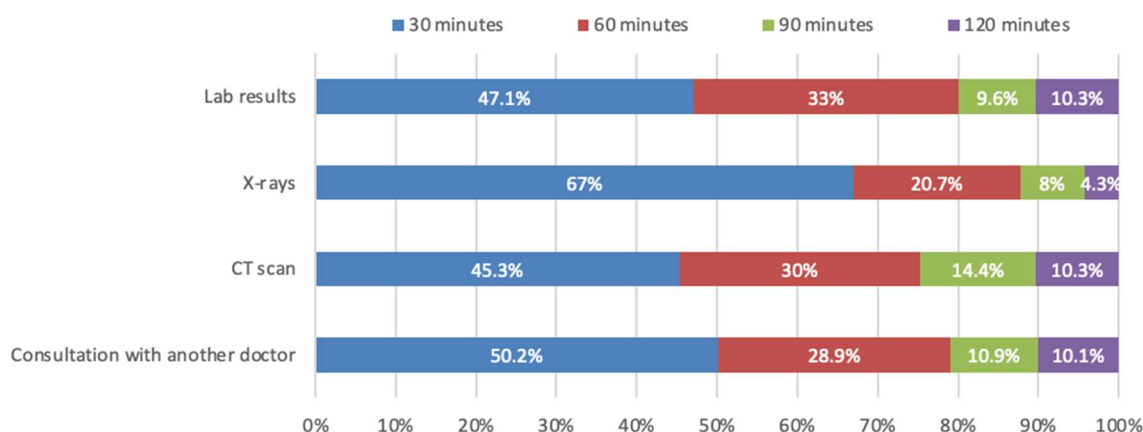


Figure 3 Knowledge about the duration of medical test screening results carried out in the ER department.

Table 2 showed the patients's perception of the emergency department. It can be observed that 36% of the patients were visiting the ER due to chronic problems. Approximately 58.4% of the respondents indicated that they were patients waiting to be seen by a doctor. The proportion of patients who called a primary physician before visiting the ER was 36.9%, wherein 33.4% reported that they were required to visit the ER due to the severity of the illness. Our results also showed that 76.4% of the respondents were aware that some patients were admitted before other patients, whereas 79.9% of the respondents thought it was fair. The proportion of patients who knew the meaning of triage was 57.7%. Approximately 62% would like to be updated on any delay in seeing the doctor. Of them, 61.1% would like to be updated every hour, while 32.5% indicated that it does not matter that provides an update because they were aware of the reasons behind waiting (87.5%). The most common reason for coming to the ER department was easy access to healthcare (41.5%) and excellent health care (28.6%).

When the importance of having information about ER function was measured in relation to socio-demographic characteristics and the perception of ER (Table 3), it was discovered that the prevalence of patients who believed the importance of ER function was statistically significantly higher among the female gender ($p = 0.044$), those with a bachelor's degree or higher ($p < 0.001$), those living in the Eastern region ($p < 0.001$) and those who were aware that some patients can be admitted before them ($p < 0.001$), those who thought that it is fair ($p < 0.001$), those who knew the meaning of triage ($p < 0.001$) and those who likes to be updated if there's any delay in seeing the doctor ($p < 0.001$).

Table 2 Patients' perception toward emergency department (n=1866)

Statement	N (%)
When did this problem start?	
Today	290 (15.5%)
Less than a week ago	414 (22.2%)
More than a week ago	491 (26.3%)
It is a chronic/ long term condition	671 (36.0%)
Are you a patient waiting to be seen or a friend/family member?	
Patient	1089 (58.4%)
Family Member	580 (31.1%)
Friend	107 (05.7%)
Co-worker	90 (04.8%)
Did you try to call your primary care doctor before coming to the ER?	
Yes	689 (36.9%)
No	1177 (63.1%)
If the answer is "yes" to the above, what was the response? (n=689)	
No appointments	225 (32.7%)
Too sick need to go to ER	230 (33.4%)
Need further testing that the doctor's office can't do	198 (28.7%)
Others	36 (05.2%)
Do you know why some patients are admitted to emergency rooms before others (even if they come later than others)?	
Yes	1425 (76.4%)
No	441 (23.6%)
Do you think this is fair?	
Yes	1491 (79.9%)
No	375 (20.1%)
Do you know what triage means?	
Yes	1076 (57.7%)
No	790 (42.3%)
Would you like to be updated if there is a delay in seeing your doctor?	
Yes	1156 (62.0%)
No	710 (38.0%)
If yes, how often do you want to be updated? (n=1156)	
Every hour	706 (61.1%)
Every 3 hours	104 (09.0%)
It doesn't matter	346 (29.9%)
Who is supposed to give you updates? (n=1156)	
A Clerk	304 (26.3%)
A Nurse	296 (25.6%)
A Physician	180 (15.6%)
It doesn't matter	376 (32.5%)
Do you want to know why you have to wait (for example, shortage of beds or other critical patients)? (n=1156)	
Yes	1012 (87.5%)
No	104 (09.0%)
Maybe	40 (03.5%)
What is your main reason for coming to the Emergency Department?	

Excellent health care	533 (28.6%)
Easy access to healthcare	775 (41.5%)
My doctor told me to come	265 (14.2%)
Close to where I live/work	293 (15.7%)

Table 3 Relationship between the importance of having information about the function of the ER department according to the socio-demographic characteristics and the perception of the patients toward ER (n=1866)

Factor	Importance of ER functions		P-value §
	Not important N (%) (n=187)	Important N (%) (n=1679)	
Age group			
≤35years	74 (44.8%)	648 (43.6%)	0.760
>35years	91 (55.2%)	838 (56.4%)	
Gender			
Male	98 (52.4%)	750 (44.7%)	0.044 **
Female	89 (47.6%)	929 (55.3%)	
Educational level			
High school or below	69 (36.9%)	372 (22.2%)	<0.001 **
Bachelor's degree or higher	118 (63.1%)	1307 (77.8%)	
Occupational status			
Employed	97 (51.9%)	900 (53.6%)	0.652
Unemployed	90 (48.1%)	779 (46.4%)	
Nationality			
Saudi	164 (87.7%)	1487 (88.6%)	0.726
Non-Saudi	23 (12.3%)	192 (11.4%)	
Marital status			
Single	83 (44.4%)	815 (48.5%)	0.281
Married	104 (55.6%)	864 (51.5%)	
Place of residence			
Northern Region	47 (25.1%)	256 (15.2%)	<0.001 **
Western Region	54 (28.9%)	364 (21.7%)	
Central Region	23 (12.3%)	422 (25.1%)	
Southern Region	15 (08.0%)	150 (08.9%)	
Eastern Region	48 (25.7%)	487 (29.0%)	
Did you try to call your primary care doctor before coming to the ER?			
Yes	66 (35.3%)	623 (37.1%)	0.626
No	121 (64.7%)	1056 (62.9%)	
Do you know why some patients are admitted to emergency rooms before others?			
Yes	100 (53.5%)	1325 (78.9%)	<0.001 **
No	87 (46.5%)	354 (21.1%)	
Do you think this is fair?			
Yes	105 (56.1%)	1386 (82.5%)	<0.001 **
No	82 (43.9%)	293 (17.5%)	
Do you know what triage means?			
Yes	71 (38.0%)	1005 (59.9%)	<0.001 **
No	116 (62.0%)	674 (40.1%)	
Would you like to be updated if there is a delay in seeing your doctor?			
Yes	94 (50.3%)	1062 (63.3%)	<0.001 **

No	93 (49.7%)	617 (36.7%)	
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§ P-value has been calculated using Chi-square test

** Significant at p<0.05 level.

In a multivariate regression analysis (Table 4), it was discovered that having a bachelor's degree or higher, living in the Western or Eastern region, being aware that some patients can be admitted to the ER before others and knowing that it is fair were the independent significant predictors of knowing the importance of knowing about ER functions. This further suggests that, compared to patients with lower education, patients who are more educated were predicted to have a 1.7-fold higher AOR, giving more importance to having information on ER functions (AOR=1.703; 95% CI=1.214 – 2.388; p=0.002). Patients who were living in the western region were 1.74 times more likely to give more importance to having information about ER functions compared to patients living in the northern region (AOR=1.741; 95% CI=1.115 – 2.717; p=0.015) but patients who were living in the eastern region were less likely (AOR=0.574; 95% CI=0.338 – 0.974; p=0.040).

Patients who knew the reason why some patients were admitted to the ER before others were predicted to increase the chance of giving more importance to having information about ER functions by at least 1.7-fold higher compared to those who did not know the reason (AOR=1.694; 95% CI=1.075 – 2.670; p=0.023). Also, we have learned that patients who thought that this treatment was fair were predicted to increase the chance of giving more importance to having information about ER functions by at least 1.9 times higher than those who thought it was not fair (AOR=1.938; 95% CI=1.234 – 3.035; p=0.004). Other variables included in the model did not show a significant effect on giving importance to having information about ER functions after adjustments to the regression model, including age group, knowing the meaning of triage and wanting to be updated if there's any delay in seeing a doctor (p>0.05).

Table 4 Multivariate regression analysis for the predictor of the importance of having information about the function of the ER department according to the socio-demographic characteristics of the patients (n=1866)

Factor	AOR	95% CI	P-value
Gender			
Male	Ref		
Female	1.257	0.915 – 1.728	0.158
Educational level			
High school or below	Ref		
Bachelor's degree or higher	1.703	1.214 – 2.388	0.002 **
Place of residence			
Northern Region	Ref		
Western Region	1.741	1.115 – 2.717	0.015 **
Central Region	1.082	0.697 – 1.681	0.724
Southern Region	0.574	0.338 – 0.974	0.040 **
Eastern Region	1.030	0.548 – 1.935	0.927
Do you know why some patients are admitted to emergency rooms before others?			
Yes	1.694	1.075 – 2.670	0.023 **
No	Ref		
Do you think this is fair?			
Yes	1.938	1.234 – 3.035	0.004 **
No	Ref		
Do you know what triage means?			
Yes	1.428	0.983 – 2.073	0.061
No	Ref		
Would you like to be updated if there is a delay in seeing your doctor?			
Yes	1.289	0.931 – 1.784	0.126

No	Ref	
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AOR – Adjusted Odds Ratio; CI – Confidence Interval.
** Significant at the p<0.05 level

4. DISCUSSION

The purpose of the present study is to examine patients’ expectations of emergency department care in Saudi Arabia. Our study measures patients' expectations by asking how important it is to them to have information about emergency functions and how to reach a primary care physician. We noted that this is the first study in Saudi Arabia that evaluated the significance of having information about ED services for patients who require urgent treatment. The findings of this study showed that approximately 90% of the patients believed that it was important or very important to have information about the ED functions, leading them to visit a primary care doctor. In Canada (Cooke et al., 2006), among the 837 patients who visited the ED, they placed the highest importance on the explanation of the test results (96.5%), followed by a description of a situation that would necessitate their return to the ED (94.4%), the use of simple language (92.1%) and the purpose of the tests (90.8%).

In Riyadh, Saudi Arabia (Mohamed et al., 2014), patients who visited the ED at King Fahd Hospital indicated that they expected to be informed about the anticipated waiting time to be seen by a doctor within a reasonable timeframe and that the visit should be organized along with the process and procedures and that the ED staff would be caring and cooperative. Patients’ expectations of ED services could vary for different reasons. Therefore, further investigation is warranted to help understand patients' outlooks on ED functions and determine whether their satisfaction will lead them to return to the same ED for future events. Being a professional and living in the western region, being aware that some patients can be treated in the ER ahead of others and believing the ER is fair, were found to be critical in giving high importance to having information about ED functions. But there was no relationship with gender after adjustment to regression estimates. This is almost consistent with that of Alhussain et al., (2019). Based on their reports, the awareness of the Saudi population about the role of ER was significantly associated with age and educational levels but not with gender, while in a study done by Spechbach et al., (2015), their satisfaction with ED services were measured through wait perception. Accordingly, they reported that the significant predictors for wait perception were an appropriate assessment of the emergency level by caregivers, respect for privacy, the feeling of being forgotten and insufficient information on certain waiting times. Being more knowledgeable about emergency department functions is an advantage for patients who frequently visit the ER. Having visited the same ED indicates that their expectations and satisfaction levels were high alternatively, focusing on better ED services such as shortened waiting times and better communication among patients could lead to better expectations and satisfaction among its visitors.

Our patients believed that a 30-minute waiting window to obtain results would increase their satisfaction rate in ED. Data in our study suggest that 67%, 50.2%, 47.1% and 45.3% of the patients expected to receive the results related to their medical screening and consultation, such as X-ray results, consultations with specialized doctors, lab results and CT scan results. This is reliable with the paper of De-Steenwinkel et al., (2022), as well as Shah et al., (2015). Both papers indicated that shortened waiting times at EDs could significantly increase patients' satisfaction with ED services. Although they were more likely to accept waiting more times if they were informed of the delay in a timely manner. Understanding what services, the ED offers is critical for patients. For example, 76.4% were aware that some patients may be admitted to the ER ahead of others due to the severity of their conditions (57.7%) and nearly 80% thought this was fair.

However, despite these circumstances, nearly two-thirds (62%) of our patients would like to be updated and be oriented to the reasons for any delay in seeing a doctor (87.5%) on at least an hourly basis (61.1%), irrespective of who will give an update (32.5%). In Canada (Cooke et al., 2006), a similar result had been noted among patients who visited the ED at the Calgary Health Region in 2002. Based on the reports, patients believed that ED personnel should update the patients every half an hour or less (76%), 51.3% expected that patients with non-life-threatening problems should wait less than an hour, 64.4% thought that the most serious patients should be observed first and 58.3% expected that the test results should be ready within an hour. However, in an emergency care center in central Saudi Arabia (Cooke et al., 2006), male patients with long waiting times and low perceived health status were likely to exhibit lower satisfaction with ED care services. The author further suggested shortening patients’ waiting times could improve patients' satisfaction rates, which are essential in health care services, specifically in emergency settings.

Most patients visit the ED since it is a point of entry into the hospital and expect the best and fastest treatment for emergency cases and patients use ED services for a variety of reasons. In our study, easy access to healthcare was the most common reason for utilizing ED care (41.5%), followed by excellent healthcare (28.6%). Other reasons being expressed were the location of the ED (15.7%) and an appointment with the doctor (14.2%). Conversely, 36.9% of the patients tried to call their primary care physicians

before coming to the ED were requiring going to the ER due to the severity of illness (33.4%) and the unavailability of an appointment (32.7%) were the most frequent reasons for not allowing them to visit the desired physician.

In India (Davey et al., 2022), the most common ways patients learned about ED were through a family member's recommendation (61%) and referral by a healthcare provider (45%). Furthermore, 85% were expected to see an ED specialist consultant and the remaining 12% were expected to see their physician. Community awareness about ED services is imperative to increasing patients' expectations when visiting the ER in the future.

5. CONCLUSION

There was high importance given by the patients to knowing emergency department functions, indicating great expectations about the services provided by the ED. Patients with better education who are living in the western region and have a better perception of EDs tend to give more importance to knowing ED functions as compared to other patients. Early advice about medical screening results could improve satisfaction among ED visitors. More research is needed to determine the importance of having information about emergency department functions among patients who had frequent emergency events.

Acknowledgement

We thank the participants who were all contributed samples to the study.

Ethical approval

The study was approved by the Medical Ethics Committee of The King Fahad Hospital-Hofuf's IRB (Ethical approval code: 04-EP-2023)

Informed consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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