

Avoiding medical visits even when needed during the COVID-19 pandemic: A cross-sectional survey from Saudi Arabia

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Abstract

Background: Seeking medical care during the COVID-19 pandemic became a controversial issue due to increased vulnerability and fear of being infected (COVID-19). There is a lack of empirical evidence about factors associated with avoiding medical visits during the first wave of the pandemic in KSA. Therefore, this study aims to determine the rate of avoiding medical visits and associated factors during the first wave of the pandemic in KSA.

Methods: 754 participants from various KSA regions responded to an online survey questionnaire that collected data on background variables, testing and diagnosis with COVID-19, chronic medical conditions, and presence of symptoms of stress, anxiety, and depression. Chi-square test and binary logistic regression were used to assess the predictive role of various factors in avoiding medical care.

Results: More than half (55%) of the participants avoided medical visits during the first wave of COVID-19 pandemic due to fear of catching the infection. Females and married were more likely (OR=1.46; 95% CI: 1.09-1.95) and (OR=1.41; 95% CI: 1.04-1.92) to avoided medical visits than males and unmarried, respectively. Participants who tested or diagnosed for COVID-19 were less likely to avoid medical visits (OR=0.58; 95% CI: 0.39-0.88) and (OR=0.47; 95% CI: 0.26-0.85) respectively. Respondents with and without chronic medical conditions were equally likely to avoid medical care ($p>.05$). Those who reported symptoms of stress, anxiety, and depression were more likely to avoid medical despite when it was needed (OR=1.62; 95% CI: 1.19-2.19); (OR=1.66; 95% CI: 1.22-2.26) and (OR=1.40; 95% CI: 1.04-1.87) respectively.

Conclusions: Public health campaigns should emphasize the importance of visiting health centers; and normalize psychological reactions associated with the COVID-19 pandemic to mitigate the negative impact on health status. Health system should also be prepared to accommodate the consequences of delayed health visits.

Keywords: COVID-19 pandemic, Medical care avoidance, General Health, Psychological reactions,

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1. INTRODUCTION

Health experts have expressed apprehensions about people's avoidance of seeking healthcare for serious medical issues leading to a devastating impact on community health. Data from health tracking polls demonstrate that people either avoided or delayed needed medical care during the COVID-19 pandemic ¹. The statistics reported in New York Times and other studies in developed countries shows the rates of diagnoses of medical conditions such as stroke, heart attack and cancer decreased up to 45%, which is an indicator for avoiding needed medical care ². Similarly, another study reported that 55% postponed their visit to health centers during the Covid-19 pandemic, and the prime

reason to avoid medical care was fear of catching COVID-19 infection ³.

This situation is a major concern considering its implications on health of people suffering with chronic disease conditions, and chronic mental health disorders. A case report of a patient with myocardial infarction demonstrates an increased risk of morbidity and mortality due to delay in seeking medical care during the COVID-19 pandemic ⁴. Another study compared the patient admission rates from 17 public primary percutaneous coronary (PCI) centers in Austria demonstrated 40% relative decrease in rates of admission of patients with Acute Coronary Syndrome (ACS) ⁵. The Ministry of Health (MOH) in the Kingdom of Saudi

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Arabia (KSA) adopted an all-encompassing strategy to overcome challenges during COVID-19 pandemic. MOH adopted multipronged strategies including expanding and relocating existing healthcare resources to rapidly detect COVID-19 infected cases and immediate access to the available treatment ⁶. Moreover, MOH implemented a couple of public health interventions to enhance compliance with some precautionary measures at the individual and community levels ⁷. Some of these interventions are “Mawid” which facilitate people in self-assessment for COVID-19 as well as the setup of nearly 237 “Tataman” clinics to meet the needs of people who display symptoms of COVID-19 infection ⁸. Additionally, during the complete lockdown period people had facility to utilize e-permits issued through “Tawakkalna” app to visit health centers and seek needed medical care. All these steps were effectively in controlled the morbidity and mortality associated with COVID-19 infection; however, there is limited evidence about what measures taken to fill the gap of attending to the routine healthcare needs of patients with non-COVID diseases.

We were unable to retrieve any study from Saudi Arabia that assessed rate and reasons for avoiding visiting medical centers even when medical care is needed during COVID-19 pandemic. However, the research reports from other developed countries of the world shows that people restrict themselves to visit healthcare centers or coming in contact with healthcare workers due to high perceived risk of catching COVID-19 infection from these places ^{4,5}.

As part of a bigger study about the impact of COVID-19 on the population health, the present paper aims to identify the sociodemographic profile of people who avoided medical care through medical centers out of fear of COVID-19 in the Kingdom of Saudi Arabia and determine its associated factors.

2. MATERIALS AND METHODS

2.1. Participants & Procedure

The sample comprised of 754 male and female participants with a mean age of 36±10.9 years. The online survey was conducted between 4th to 17th July 2020 to obtain responses from people living in thirteen geographical regions of the KSA. All participants agreed on informed consent before completing the survey questionnaire.

2.2. Study Variables and Instruments

Background Information: Participants provided information about their demographic background, including gender, age, education, marital status, and nationality.

Chronic Health Conditions: Participants reported any chronic health problems on a given list of possible chronic health conditions by choosing either ‘Yes’ or ‘No’ option. An open-ended item obtained data about any specific health condition not in the list.

Exposure to COVID-19 infection: This section inquired if the participant himself or his family member/relative/friend was

tested and diagnosed with COVID-19.

Psychological Health Status: A version of the Depression Anxiety Stress Scales (DASS-21) assessed the symptoms and levels of stress, anxiety, and depression ⁹. Each subscale contains seven items rated on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much) and determine the levels of depression, anxiety, and stress. The cut off scores is determined on the subscales to categorize the severity of symptoms from mild to extremely severe. In our study, we have used dichotomized the variables as (Normal=0) and (Stressed=1). Similarly, Anxiety and Depression were also recorded as binary variables.

Avoiding Medical Care from Medical Centers: Avoiding medical care from medical centers out of fear of catching infection during the COVID-19 pandemic was assessed in the survey questionnaire. Participants were asked to provide either ‘Yes’ or ‘No’ response to an item ‘Did you decide not to visit any medical center during COVID-19 pandemic despite it was needed at that time because you were afraid about catching COVID-19 virus?’.

2.3. Statistical analysis

All the statistical analysis was performed by using IBM SPSS version 21. Descriptive analysis was done to understand the details of the socio-demographic characteristics of the study population. The frequency and percentage of anxiety, stress, and depression were also reported. Univariate analysis and multivariate analysis were completed to identify factors associated with avoiding medical care. Odds ratio and significance levels were considered significant at p<0.05.

2.4. Ethical consideration

All participants voluntarily participated in this study. Informed consent was taken at the beginning of the questionnaire describing the details and purpose of the study. The survey did not ask for any personal information of the participant. The Ethical Committee of the University of Hail approved the study, and the ethical approval number is 55456/5/41.

3. RESULTS

The descriptive characteristics of the participants were presented in Table 1. The sample includes (54%) male and (46%) female participants with age range from 18 to 65 years, and the minimum level of education was middle school (1.3%) whereas the highest level of education was post-graduate (33.6%). The majority, 67% and 74% of the participants were married and Saudi national, respectively. In this study, 26% of the participants reported suffering from chronic medical problems, including hypertension, diabetes, asthma, arthritis, cancer, heart diseases, obesity, and psychiatric problems. While 6.9% of the participants were diagnosed positively with COVID-19 infection and 20% had a family member or friend diagnosed with COVID-19 infection. The prevalence of stress, anxiety, and depression was 36.5%, 34.1%, and 43.5%, respectively.

Table 1. Descriptive characteristics of study participants and medical visits status during the first wave of COVID-19 pandemic in KSA (n=754).

Demographic variables	Avoided medical care during the pandemic		p-value
	Yes n (%)	No n (%)	

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Gender			
Males (n=408; 54.1%)	207 (50.7%)	201 (49.3%)	0.010
Females (n=346; 45.9%)	208 (60.1%)	138 (39.9%)	
Age in years			
18-25 years (n=146; 19.4%)	74 (50.7%)	72 (49.3%)	0.751
26-35 years (n=222; 29.4%)	127 (57.2%)	95 (42.8%)	
36-45 years (n=257; 34.1%)	140 (54.5%)	117 (45.5%)	
46-55 years (n=102; 13.5%)	59 (57.8%)	43 (42.2%)	
56-65 years (n=27; 3.6%)	15 (55.6%)	12 (44.4%)	
Education			
Middle School (n=10; 1.3%)	5 (50%)	5 (50%)	0.963
High School (n=89; 11.8%)	48 (53.9%)	41 (46.1%)	
College/University (n=401; 53.2%)	220 (54.7%)	182 (45.3%)	
Post-graduate (n=253; 33.6%)	142 (56.1%)	111 (43.9%)	
Marital Status			
Unmarried (n=246; 32.6%)	121 (49.2%)	125 (50.8%)	0.025
Married (n=508; 67.4%)	294 (57.9%)	214 (42.1%)	
Nationality			
Saudi (n=559; 74.1%)	314 (56.2%)	245 (43.8%)	0.290
Non-Saudi (n=195; 15.5%)	101 (51.8%)	94 (48.2%)	
Chronic Medical Problems			
Yes (n=195; 26.0%)	108 (55.1%)	87 (44.9%)	0.910
None (n=559; 74.0%)	307 (54.9%)	252 (45.1%)	
Type of Chronic Medical Problems			
Hypertension (n=49; 6.5%)	22 (44.9%)	27 (55.1%)	0.584
Diabetes (n=44; 5.8%)	28 (63.6%)	16 (36.4%)	
Psychiatric problems (n=32; 4.2%)	17 (53.1%)	15 (46.9%)	
Asthma (n=23; 3.1%)	13 (56.5%)	10 (43.5%)	
Hypercholesterolemia/ Obesity (n=18; 2.4%)	12 (66.7%)	6 (33.3%)	
Migraine (n=16; 2.1%)	7 (43.8%)	9 (56.3%)	
Heart Disease, Cancer, Arthritis (n=13; 1.7%)	9 (74.1%)	3 (26.5%)	
None (n=559; 74%)	307 (54.9%)	252 (45.1%)	
Tested for COVID-19			
Not tested (n=403; 53.4%)	229 (56.8%)	174 (43.2%)	0.017
Tested for COVID-19 (n=124; 16.4%)	54 (43.5%)	70 (56.5%)	
Family/Friends tested COVID-19 (n=224; 29.7%)	131 (58.5%)	93 (41.5%)	
Diagnosed for COVID-19			
Not Diagnosed (n=548; 72.7%)	301 (54.9%)	247 (45.1%)	0.007
Diagnosed Positive for COVID-19 (52; 6.9%)	19 (36.5%)	33 (63.5%)	
Family/Friends Diagnosed Positive for COVID-19 (154; 20.4%)	95 (61.7%)	59 (38.3%)	
Stress Symptoms			
Yes (n=275; 36.5%)	172 (62.5%)	103 (37.5%)	0.002
No (n=479; 63.5%)	243 (50.7%)	236 (49.3%)	
Anxiety Symptoms			
Yes (n=263; 34.9%)	166 (63.1%)	97 (36.9%)	0.001
No (n=491; 65.1%)	249 (50.7%)	242 (49.3%)	
Depression Symptoms			
Yes (n=328; 43.5%)	196 (59.8%)	132 (40.2%)	0.027
No (n=426; 56.5%)	219 (51.4%)	207 (48.6%)	

Table 2. Logistic regression to predict relationship between demographic variables and avoiding medical visits even when needed during pandemic (n=754).

Predictor variables	Avoiding medical visits OR (95% CI)
Gender	
Males	Reference

Females	1.46 (1.09-1.95) **
Age in years	
18-25 years	Reference
26-35 years	1.30 (0.85-1.97) ^{ns}
36-45 years	1.16 (0.77-1.74) ^{ns}
46-55 years	1.33 (.81-2.22) ^{ns}
56-65 years	1.21 (0.53-2.77) ^{ns}
Education	

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Middle School	Reference
High School	1.17 (0.31-4.32) ^{ns}
College/University	1.20 (0.34-4.24) ^{ns}
Post-graduate	1.27 (0.36-4.52) ^{ns}
Marital Status	
Unmarried	Reference
Married	1.41 (1.04-1.92) *
Nationality	
Saudi	Reference
Non-Saudi	0.83 (0.61-1.16) ^{ns}
Chronic Medical Problems	
Yes	1.01 (0.73-1.41) ^{ns}
None	Reference
Type of Chronic Medical Problems	
None	Reference
Hypertension	0.66 (0.37-1.21) ^{ns}
Diabetes	1.43 (.760-2.71) ^{ns}
Psychiatric problems	0.93 (0.45-1.91) ^{ns}
Asthma	1.06 (0.46-2.47) ^{ns}
Hypercholesterolemia/Obesity	1.64 (0.61-4.43) ^{ns}
Migraine	0.63 (0.23-1.73) ^{ns}
Heart Disease, Cancer, Arthritis	2.46 (0.49-12.03) ^{ns}
Tested for COVID-19	
Not Tested	Reference
Tested for COVID-19	0.58 (0.39-0.88) **
Family/Friends tested COVID-19	1.07 (0.76-1.49) ^{ns}
Diagnosed for COVID-19	
Not Diagnosed	Reference
Diagnosed Positive for COVID-19	0.47 (0.26-0.85) **
Family/Friends Diagnosed Positive for COVID-19	1.32 (0.96-1.91) ^{ns}
Stress Symptoms	
No	Reference
Yes	1.62 (1.19-2.19) **
Anxiety Symptom	
No	Reference
Yes	1.66 (1.22-2.26) **
Depression Symptoms	
No	Reference
Yes	1.40 (1.04-1.87) *

***p<.001; **p<.01; *p<.05; ns=non-significant; OR=Odds ratios

More than half of the participants (55%) avoided medical visits during the first wave of the COVID-19 pandemic out of fear of catching the COVID-19 infection (Figure 1).

Figure 1. Medical visits during the first wave of the COVID-19 pandemic in KSA, 2020

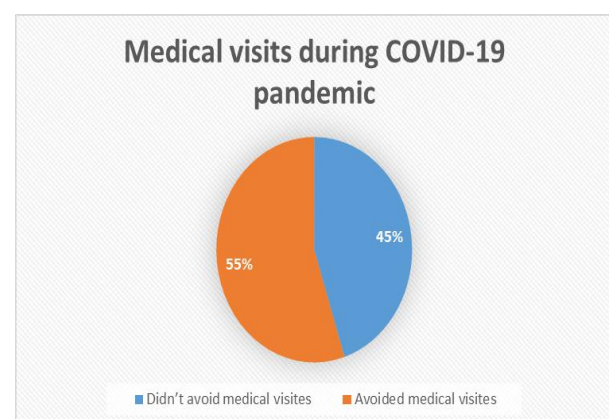
Demographic data of the participants were reported in table 1. Findings demonstrate that female participants and those who were married had a significantly higher percentage of avoiding medical visits during the COVID-19 pandemic, 60.1% and 57.9%, respectively (p<0.05). A higher percentage of participants who were not tested and family/friends tested for COVID-19 avoided medical visits 56.8% and 58.5%, respectively (p<0.01). The participants suffering stress, anxiety, and depression had a higher significant percentage of avoiding medical visits during the COVID-19 pandemic 62.5%, 63.1%, and 59.8%, respectively (p<0.01). There was a non-significant difference regarding age group, education level, nationality, and chronic medical problems between those who avoided medical visits or not. Logistic regression (table 2) demonstrates that females were

almost one and half times (OR=1.46; 95% CI: 1.09-1.95) more likely to avoid medical visits even when needed during the first wave of the COVID-19 pandemic than males. Similarly, married participants were similarly avoided medical visits compared with married ones (OR=1.41; 95% CI: 1.04-1.92). Participants who tested or diagnosed with the COVID-19 were less likely to avoid medical visits (OR=0.58; 95% CI: 0.39-0.88) and (OR=0.47; 95% CI: 0.26-0.85) compared to other groups. In addition, participants who reported symptoms of stress, anxiety, and depression almost more likely to avoid medical visits despite when it was needed (OR=1.62; 95% CI: 1.19-2.19); (OR=1.66; 95% CI: 1.22-2.26) and (OR=1.40; 95% CI: 1.04-1.87), respectively compared with normal.

4. DISCUSSION

The current study aimed to determine the impact of the COVID-19 pandemic on people's healthcare-seeking behaviors in the KSA. Findings demonstrate that more than fifty percent of the participants avoided medical visits even when needed out of fear of catching COVID-19 infection during the first wave of the pandemic in KSA which aligns with findings presented ³. They found that fear of becoming ill was a major barrier in seeking medical care for emergent conditions during COVID-19 pandemic. Participants also avoided medical visits in order to comply with lockdown restrictions. Furthermore, participants in this study were primarily concerned about getting an infection from hospital staff and level of protective measures implemented in healthcare settings. It was suggested by respondents to screen all healthcare providers on regular basis to minimize such risks ³.

The findings from current study demonstrated the female and married participants were more likely to avoid visiting medical services. People avoided visiting healthcare centers to abide by social distancing during this time. Al-Hanawi et al. demonstrated that females in KSA are more likely to comply with social distancing measures in comparison to males ¹⁰. Furthermore, in current study we found that participants who had higher anxiety, stress and depression more likely to avoid medical visits. Previous studies have demonstrated that females are at increased to experience psychological symptoms during COVID-19 ^{11, 12}. Married participants are more likely to live with families and children, which may have been a factor in limiting their visits to medical centers out of fear of catching an infection and avoiding the vulnerability of their families.



Our study's finding shows no significant difference in the percentages of avoiding medical visits between those with or without chronic medical condition (p. value =0.91). More

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than half of participants who had chronic medical conditions did not pursue even needed medical visits, and we found that participants who had and who did not have chronic medical conditions both were equally likely to avoid medical visits ($p=0.91$). These were important observations because avoiding appropriate medical care when needed can aggravate existing medical problems and significantly impact people's general health status, especially those with chronic medical problems. Current findings align with another study finding¹³, which also reported a decreasing trend in seeking needed emergency medical care during the first few months of the COVID-19 pandemic in the USA, which lies between 41% to 63%.

In our study, 63% of diabetic patient avoided medical visits during the first wave of the COVID-19 pandemic due to fear of catching the infection. These findings contradict with analysis of national rates of visits for the year 2011-2015, which reported 21% increase of visits to emergency departments for management of diabetes in KSA¹⁴. Participants who had stress, anxiety, and depression were more likely to avoid medical visits during the COVID-19 pandemic. The possible explanation for these findings is general aggravated fear responses associated with mortality and morbidity rates due to the COVID-19 and risk messaging in local and international media¹⁵. Findings aligns with a population-based study from the USA which also showed strong association of mental health symptoms with avoiding needed medical care amidst the COVID-19 pandemic¹⁶. Individuals likely have avoided medical visits due to concerns about the possibility of extended wait times or increase human-to-human interaction, which can increase the vulnerability to catch COVID-19 infection. However, the impact of such delayed medical care has adverse health outcomes and may increase the risk for mortality of cardiac patients that has been viewed as collateral damage¹⁷.

Our study findings demonstrated that participants who were either tested or positively diagnosed with COVID-19 were less likely to avoid medical visits. This demonstrates that individuals who had caught infection were visiting medical centers for medical care. This was early time of pandemic, and people were relied more on healthcare centers and hospitals to manage the symptoms of COVID-19 infection. However, during the late phase of pandemic the medical centers were encouraging those diagnosed with mild to moderate COVID-19 symptoms to quarantine themselves at home, which was a more effective approach in successful treatment of COVID-19. This also decreased the risk of infection for people visiting medical centers for other reasons.

Our study concluded that people avoided medical visits during the first pandemic wave, even when needed due to fear of catching COVID-19 infection. This risk was equal for those with or without chronic medical conditions and aggravated for those experiencing stress, anxiety and depression. These findings suggest that public health campaigns should normalize psychological reactions and emphasize the importance of visiting designated health centers in case of serious symptoms or medical conditions. Additionally, the ministry of health can take more initiatives to enhance the healthcare system capacity in order to meet the healthcare needs of populations who are reluctant to visit medical centers. The current study findings have certain implications for public health and medical institutions to enhance physical and mental health in the communities.

Firstly, media campaigns should focus on normalizing the

elevated levels of fear associated with the COVID-19 infection. Secondly, healthcare organizations should be more stringent in adopting preventive actions and protocols to control the spread of COVID-19 infection in hospital staff and visitors. Thirdly, the online appointment system should be used which should be strictly followed with reminders to both practitioners and patients, in order to decrease waiting time. This will be effective to control fear levels as well as decrease the risk of exposure. Fourthly, public health campaigns should educate people to seek appropriate medical care when needed by providing enough information and resources to seek medical care from designated healthcare centers during pandemic. Fifthly, the Ministry of Health should focus on enhancing healthcare centers capacity to cater the healthcare needs of the community. Lastly, the Ministry of Health can take some initiatives for medical follow-up of people with chronic medical conditions. This is possible by retrieving telephone or online contact information from previous medical records of patients; approach them for assessment of their current health conditions and providing them appropriate medical advice and guidance to continue visit designated medical centers if needed.

The finding should be considered with the following limitations: data was collected through online survey during the lockdown period of the pandemic, which might be the reason for the limited representation of participants with chronic medical conditions in this survey. Secondly, we did not inquire in detail about availability, preferences, and actual utilization of any other community health resources by people who were avoiding medical visits even when needed to identify existing gaps in healthcare services.

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Conflicts of interest

The authors declare that they have no conflict of interest.

Declaration

"Adaptations made into (Arabic language) from (Arabic-WHOQOL-BREF), Geneva, World Health Organization (WHO), (3 May 2020), (<https://www.who.int/toolkits/whoqol/whoqol-bref/docs/default-source/publishing-policies/whoqol-bref/arabic-whoqol-bref>, accessed (2nd June 2020). WHO is not responsible for the content or accuracy of this translation/adaptation. In the event of any inconsistency between the English and the insert language translation, the original English version shall be the binding and authentic version."

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