



Psychosocial impact of COVID-19 quarantine on Sudanese population in Khartoum state: A cross sectional study

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Received: 25-Jul-2022, Manuscript No. AJVEPD-22-70221; **Editor assigned:** 28-Jul-2022, PreQC No. AJVEPD-22-70221 (PQ); **Reviewed:** 11-Aug-2022, QC No. AJVEPD-22-70221; **Revised:** 24-Oct-2022, Manuscript No. AJVEPD-22-70221 (R); **Published:** 31-Oct-2022, DOI: 10.51268/2937-2709.22.07.016.

Abstract

Introduction: The 2019 Coronavirus disease (COVID-19) pandemic is a public health emergency of international concern, this pandemic is generating stress throughout population and has many effects on the mental and psychological health of population according to recent researches from different countries; research data are needed to develop evidence based strategies to reduce the adverse effects during this pandemic.

Objective: The aim of this study was to reveal the psychosocial impact of Coronavirus quarantine on Sudanese population.

Methodology: This was a descriptive cross sectional community based study. The study was conducted in seven localities in Khartoum state using systematic random sampling techniques between the period of July-September 2020, data was entered into Microsoft excel and analyzed using SPSS v.26.

Results: 926 participants were involved, 59.6% were males and 40.4% were females. Mean age of participants was (31.98 ± 66.05 SD). The study revealed the poor adherence to quarantine and that 41.1% of participants had severe psychological distress, it also reported significant association with sex (Women are more vulnerable), marital status, financial burden and social support as a protective way against these disorders.

Conclusion: The study concluded that COVID-19 has a great impact on the psychosocial status of Sudanese and that good social support is one of the most protective ways against this impact.

Recommendations: This study suggested the need of approachable mental and psychosocial services during this pandemic, civil organizations contribution to raise the awareness among communities and implementation of safe social support groups considering the public health measures.

Keywords: Psychosocial, Quarantine, Coronavirus, Sudanese, Psychological distress.

INTRODUCTION

The novel coronavirus is a new highly contagious

virus that emerged in December 2019 in Wuhan city, China causing coronavirus disease (COVID-19) as referred to by the WHO. The disease quickly

spread across china and then to several countries becoming a global health emergency and pandemic affecting more than 200 countries worldwide.

The virus SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus) is easily transmitted through respiratory droplets either by human to human contact or by infected fomites. It has no known Specific therapeutic pharmacological treatments. Compared to severe acute respiratory syndrome; Coronavirus disease has a similar incubation period (7-21 days) and genetic structure but has a higher transmissibility rate and lower pathogenicity (Nussbaumer-Streit B, et al. 2020). So; Public health measures aim to break the transmission chain by reducing a human to human contact through quarantine, social distancing, and isolating symptomatic patients from non-infected people which are the most favorable as the first line of defense against the virus (Wang X, et al. 2016).

Unfortunately, during such public health and community crisis misleading information society and media can spread rapidly among different populations causing high levels of stress and concerns which can lead to some sort of stigmatization and discrimination (Torales J, et al. 2020). Implementation of mass quarantine will only add to the sense of losing control and being trapped, resulting from the indications of the severity of the situation and the probability that it is liable to worsen although the WHO had provided guidance and advice for people of all levels during the COVID-19 pandemic (Chatterjee K and Chauchan VS 2020).

Psychological distress is often applied to the undifferentiated symptoms ranging from general symptoms like depression and anxiety symptoms to personality traits, disabilities, functional and behavioral problems. Psychological distress is assessed using different scales that are either self-administered or administered by a clinician or a research interviewer.

Literature has demonstrated the various effects of the COVID-19 pandemic on the mental and psychological health of population generally, health workers, and people in isolation. For example, a descriptive cross sectional study was done in Wuhan, China aimed to explore the prevalence and factors linked to anxiety and depression in hospitalized patients with COVID-19, showed that, of 144 participants, 34.72% and 28.47% patients had symptoms of anxiety or depression, respectively. And that less social support was correlated with more anxious and depressive symptoms among patients with COVID-34.72% and 28.47% patients had symptoms of anxiety or depression, respectively, and recommended that it's important to have nation wide strategic planning to implement psychological first aid during this pandemic.

19.

The current care systems and their approaches in dealing with the global crisis have not been well prepared yet in the field of mental health and the delivery of mental health services (Lake J and Turner MS 2017). crisis and disasters have a strong negative impact on psychological health, such as stress, depression and in some lead to suicide; one of the most common causes of preventable death. Mental illness is the pandemic of the 21st century and will be the next major global health challenge that faces humanity.

According to the WHO mental health atlas 2011-2017, only 36% of the people in low income countries have mental legislation which suggests there is a need to improve mental health and reinforce mental health Systems, especially in low income countries, therefore communities should be educated about mental health as well as patients and their families, doctors must be well trained to provide services and governments should incorporate mental health (Ali S and Agyapong V 2016). Ensuring the sustainable delivery of mental health services depends on many factors including but not limited to, community participation and awareness, political factors, government planning, and leadership.

The Covid-19 pandemic threatens overall health care as well as the provision of health services. Health care providers, therefore, have an essential and sensitive role in monitoring needs and providing psychosocial support to their patients. Collaboration is needed between healthcare providers, governments, and public health activists to deal with pandemics (Brian Z and Weintraub JA 2020).

Literature has been dominated by results from high and middle income countries; hence there is a huge need for such a research to reflect on the psychosocial impact of COVID-19 quarantine on the Sudanese population.

Problem statement

COVID-19 pandemic has various effects on the psychological and mental health of general population, patients in isolation centers and health workers. Many studies have been conducted in different countries to reflect the psychological distress that emerged among the population because of this pandemic, so governments and organizations can pay attention to these effects. for example, researches from China, Iran and other countries revealed the impact of this pandemic on peoples` mental health, of 144 participants,

Research rationale

Sudan is one of the low income countries that face many barriers regarding the access and the

utilization of psychological and mental health services, because of many factors like peoples beliefs, cultural, and financial ones. During this pandemic, access to these services is increasingly important as recommended by many organizations and clinicians.

These factors have prompted the genesis of this research, which aims to spot the light on the impact of COVID-19 Quarantine on the psychosocial health of citizens in Khartoum state, and factors that associate psychological distress.

MATERIALS AND METHODS

Study design

This was a descriptive cross sectional community based study.

Study area

The republic of Sudan is in North-East Africa, it occupies a 1.8 million square Kilometers area and has population of 43 million.

Khartoum state the capital of Sudan is one of the eighteen states of Sudan. It's the most populous state, it is surrounded by river Nile state in the north-east, in the north-west by the Northern state, in the east and southeast by the states of Kassala, Qadarif, Gezira and White Nile State, and in the west by North Kurdufan.

Study population

Sudanese who have been quarantined in Khartoum state during COVID-19 pandemic.

Sample size

$$\text{Simple size} = \frac{\text{Population Size}}{1 + \text{Population Size} \times (\text{level of Percision})^2} = \frac{5274321}{1 + 5274321 \times (0.03)^2} = 1100$$

Sampling techniques

Data was entered into Microsoft excel and analyzed by using SPSS (Statistical Package of Social Science) version 26. Descriptive statistics were done and illustrated in percentages and means.

Regarding K10 psychological distress scale, each item is scored from one none of the time to five all of the time. Scores of the 10 items are then summed, yielding a minimum score of 10 and a maximum score of 50. Low scores indicate low levels of psychological distress and high scores indicate high levels of psychological distress according to the following cut off points:

Khartoum state is naturally divided into seven localities–Khartoum, Khartoum North (Bahri), Omdurman, Ombada, Karray, Sharg Alneil and Jabl Awlyaa. Sudanese citizens have been stratified according to the population in each locality to ensure representation; a systematic random sampling method was subsequently applied for the selection of participants from the sampling frame of each locality.

- In case a respondent refused, a simple random replacement from the sampling frame was conducted.
- 926 were finally participated in the study, giving us a response rate of 84.1%.

Data collection

Data was collected by using questionnaires during the period of July-September 2020. Data collectors have been trained by authors and they ensured all the protective measures against COVID-19.

Tools and measurements

The questionnaire targeted three main areas as listed below:

- Socio demographic data: Participants were asked about demographic information including age, gender, education, marital status, residency, occupation and their expenses.
- Kessler10 (K10) survey: 10 questions assessing the psychological distress among Sudanese citizens.
- Third section: In this section, participants were asked about their adherence to quarantine, reading about COVID-19 on social media and other questions that reflect the degree of social support.

Data analysis

- 10-19 Likely to be well.
- 20-24 Likely to have a mild disorder.
- 25-29 Likely to have a moderate disorder.
- 30-50 Likely to have a severe disorder.
- Correlations were done using *chi-square* and fisher exact tests, where p-value of less than 0.05 is significant.

RESULTS

A total of 926 participated in the study from seven different Localities in Khartoum state, giving us a response rate of 84.1%, 40.4% of those participants were females and 59.6% were males. Demographic data are shown in Table 1.

Table 1. Shows demographic data of participants (n=926).

Item		Percentage
Marital status	Single	68%
	Married	28.20%
	Divorced	1.40%
	Widowed	2.40%
Education level	Illiterate	1.20%
	Primary	3.60%
	Secondary	15.60%
	University	70.80%
	Postgraduate studies	7%
	Others	1.80%
Locality	Jabl Awlyaa	13.60%
	Karry	10%
	Ombada	21.30%
	Omdurman	14.60%
	Sharg alneel	10%
	Bahri	14.80%
	Khartoum	15.70%

Psychological distress during COVID-19 quarantine

K10 psychological distress scale was used to assess the level of distress among Sudanese population, Figure 1 shows the level of distress among the study participants (Figure 2).

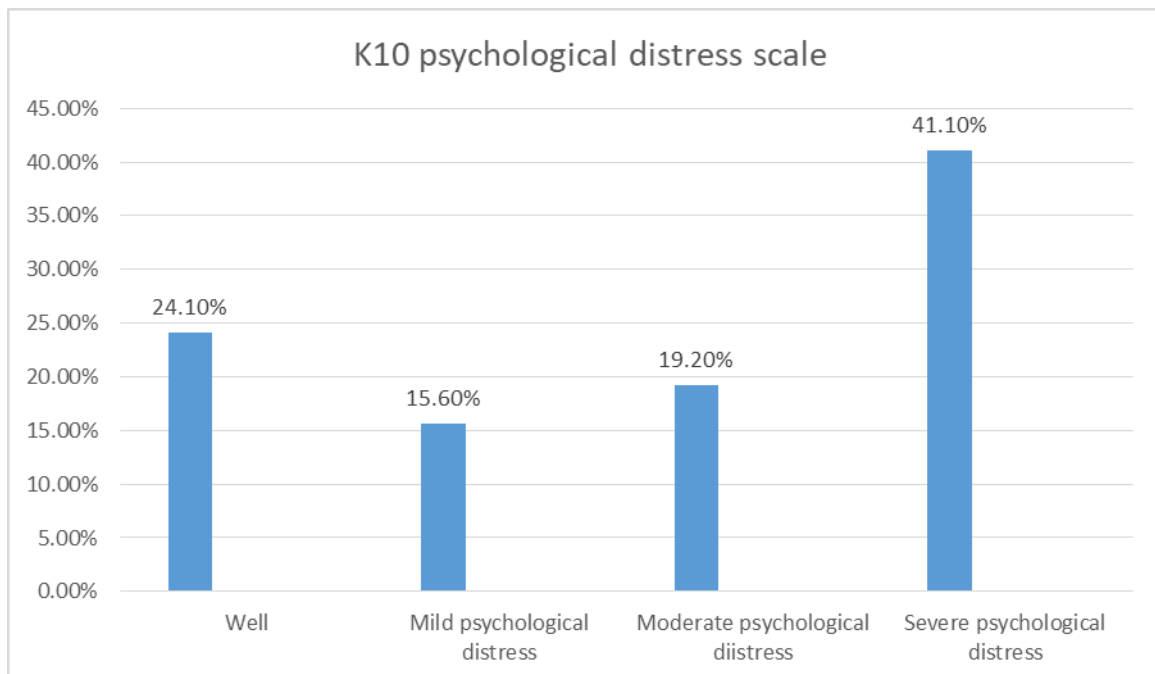


Figure 1. Shows level of psychological distress among study participants (n=926).

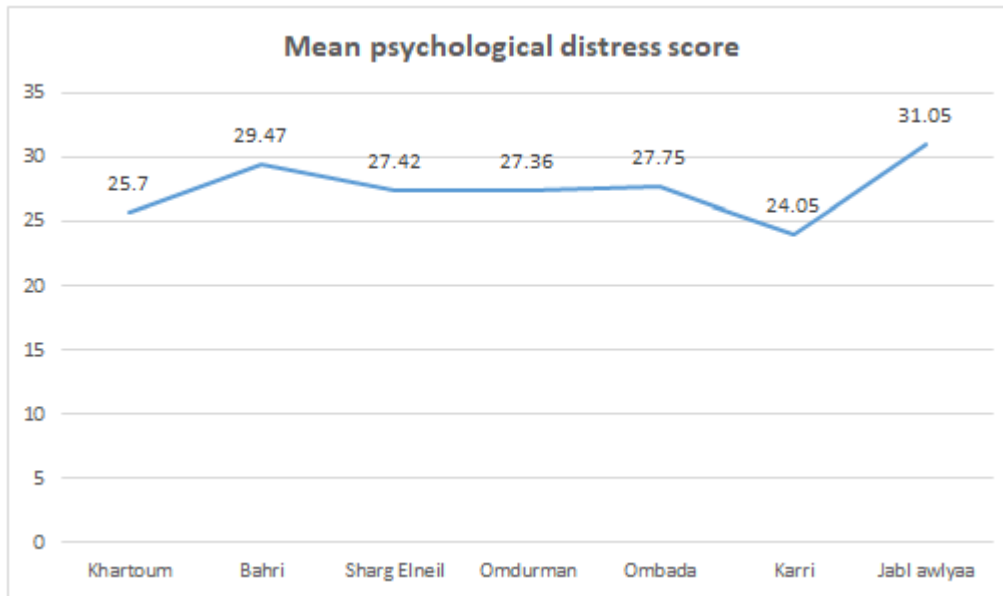


Figure 2. Shows mean psychological distress score among population in different localities. The mean was highest in Jabl Awlyaa and lowest in Karri.

Significant association was reported between psychological distress and sex when using *chi square* test (p-value of .004), Moreover the association was significant between psychological distress and both marital status and social support (p value of .000 for both associations).

Regarding the adherence to quarantine, when we asked participants how many times have they left their residence for more than 30 minutes during the last month, 40% of them left their residence more than 15 times and less than 10% of them adhered to their homes.

Fisher exact test was used to measure the association between the degree of social support

people get and with whom they live (*i.e.* alone, parents, relatives and friends) and it revealed no significant association (p value of 0.26), also results showed no significant association between psychological distress during the quarantine and the number of COVID-19 positive patients people know (p value of .08).

Chi square test revealed no significant association between psychological distress and exposure to COVID-19 news in social media (p value of 0.4), on the other hand, it showed significant association between sources of managing expenses and psychological distress. Table 2 shows this significant association.

Table 2. *Chi square* test revealed significant association between sources of managing expenses and psychological distress (p-value of 0.005).

K10	Personal savings	Steady work salary	Had to get a loan some money	Others	Total
Well	108	49	12	54	223
Mild psychological distress	61	35	8	40	144
Moderate psychological distress	82	41	9	46	178
Severe psychological distress	168	49	43	121	381
Total	419	174	72	260	926

DISCUSSION

This was a descriptive cross sectional community based study conducted in seven Localities in Khartoum state, in which 926 participants were systematically randomized. Among those participants 59.6% were males and 40.4% were females. The mean age of participants was (31.98 ± 66.05 SD).

COVID-19 pandemic effects on psychological and mental health have been studied in different communities including Europeans and Asians, but have not been studied in Sudan, thus this study aimed to reflect the psychosocial status of Sudanese citizens during COVID-19 quarantine.

This study found that 41% of the participants

suffered from severe psychological distress, this is consistent with a study conducted in Nigeria which revealed that approximately 65.1% of inmates had psychological distress due to this pandemic (Okoro J, et al. 2020). It also revealed a strong association between psychological distress and marital status; single and divorced are more vulnerable to psychological distress (p value of .00), this result is also consistent with Argentinian and Chinese studies which revealed that marriage and positive coping skills reduce the level of psychological distress and disorders (Fernández RS, et al. 2020).

A nationwide survey of psychological distress among Chinese during the COVID-19 pandemic showed that 35% of those who completed the survey, experienced psychological distress and that woman were more vulnerable to stress (Yu H, et al. 2020). It spotted the light on the importance of paying attention to the Psychological and mental health of vulnerable groups, such as elderly women (Qiu J, et al. 2020). These findings are in similitude with this study, which reported a significant association between psychological distress and gender (p-value of .004).

Recent literature revealed many factors leading to stress during quarantine including, frustration and boredom, fear of infection, inadequate information, and inadequate supplies (food). This study found that 52.2% of Sudanese read a lot about COVID-19 on social media and only 8% of them haven't read about COVID-19, this result indicated no statistically significant association between psychological distress and reading about COVID-19 on social media, however, many studies reported poor information from health authorities regarding COVID-19 as a stress factor and that psychological distress and disorders was found to be associated with insufficient knowledge about the pandemic, in addition to these stressors, the study also reported the significant impact of money resources people use to manage their expenses on their psychological health, that's why encouraging people to work with each other to reduce the financial burden of the epidemic is highly recommended (Brooks SK, et al. 2020).

Public health measures like social distancing and quarantine are important defense mechanisms against this COVID-19 pandemic, Sudan, as well as many countries worldwide imposed these measures to break the chain of transmission, hence, adherence towards lockdown is crucial during this pandemic, it is worth noting that only 8.4% of Sudanese committed to lockdown according to the findings of this study, this low adherence to lockdown percentage is consistent with another study which revealed low adherence to requested measures among Norwegian population (Steens A, et al. 2020)

This pandemic is generating stress throughout the population, hence WHO is guiding the COVID-19

pandemic for all people especially those in curfew/lockdown (Lai CC, et al. 2020). Several studies proved the existence of barriers to access and utilize psychological and mental health services particularly in low and middle income countries. A study was conducted in Sudan revealed many barriers that preclude the well utilization of psychological and mental health services; these barriers include people's understanding and beliefs, attitudinal, financial, and cultural barriers that hinder proper psychological and mental healthcare in Sudan. Because of all these barriers and the current situation in Sudan, attention should be given to all those populations who suffer from psychological and mental distress.

Good social support on the other hand has positive effects on the mental health of the population; many studies highlighted the importance of social support and its effectiveness in relieving stress and enhancing the psychological health of the population and recommended connecting people through online platforms to boost their psychological and mental well-being (Charney D and Southwick S 2007). All these studies are in line with this study which revealed a significant association between psychological distress and social support (p-value of 0.00).

CONCLUSION

This study revealed the high impact of COVID-19 curfew/lock down on the psychosocial status of Sudanese (41% experienced severe psychological distress). Women (regardless of their marital status), unmarried and those who suffer from the financial burden of this pandemic are more vulnerable to psychological distress, on the contrary, those who have good social support are more secured from the psychological impact of this pandemic.

ACKNOWLEDGMENT

Authors would like to thank all those who helped with data collection during such a hard period and those who participated in this study.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from ethical committee of Al-Neelain University, Faculty of Medicine. Verbal informed consent from the participants was obtained with an explanation that they were under research study. No information that discloses the identity of the participants was recorded by ensuring the anonymity of the research participant.

COMPETING INTERESTS

The authors declare that they have no competing

interests.

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