

Original Research Article

Psychosocial Effects of Lockdown Measures on Sudanese Population during COVID-19 Pandemic 2020, Sudan

Fatima Alzahra Galgam^{1*}, Hagir Abdullah², Mohammed Nimer³, Nahla Mohammed⁴

¹Assistant Professor of Pediatric Nursing, Faculty of Nursing Sciences, International University of Africa, Sudan

²Associate Professor-Counseling Psychology, Faculty of Arts, International University of Africa, Sudan

³Associate Professor of Community Health Nursing, Faculty of Nursing Sciences, International University of Africa, Sudan

⁴Assistant Professor Community Health Nursing, Faculty of Nursing Sciences, International University of Africa, Sudan

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Abstract: Background: Coronavirus pandemic is undeniably in the focus of worldwide attention, specific influences on the magnitude of negative psycho-socio-economic outcome. **Aim:** The study aims to explore the psychosocial effects of lockdown measures among the Sudanese population during the COVID-19 pandemic and the coping strategies used. **Methods:** A descriptive web-based method was used. The data were collected through the survey questionnaire designed on free Google forms software. A snowball technique was used to recruit the participants from different social media platforms. The data analyzed by (SPSS). **Results:** A total of 1811 Sudanese citizens were responded from different Sudan states. The findings revealed that the majority 53 % were experiencing fear of the unknown, frustration, and isolation, around 52 % feeling sad and depressed. Majority 64% reported reduced livelihood opportunities. 69% reported that the lockdown could negatively affect students' academic performance. Some positive effects were identified among respondents including an increase in positive relationships within family members. The most coping strategies used was getting closer to God with prayers, reading the holy Quran. Engagement in physical exercise, follow all necessary instructions to protect themselves and others, 66% spending time on social media, connecting with others. The study indicated a significant association between psychological effects of lockdown on Sudanese people such as age, gender, and occupation. Also, a significant association between age, occupation, and source of income, and the social effect of lockdown. No significant association was found between socio-demographic data and coping strategies. **Conclusion:** Our study concluded that the lockdown due to the COVID-19 pandemic had indeed adversely affected the majority of Sudanese respondents in psychological, social, and economic well-being. Different positive coping strategies used to reduce the stress and to adapt to the situation. Researchers in this study suggested expansion of effective counseling, mental health and social services for Sudanese communities.

Keywords: Psychosocial effects, lockdown measures, Sudanese, Coping strategies, COVID 19.

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INTRODUCTION

Many coronaviruses have received much attention in recent years [1]. Due to its properties as it causes a wide variety of human and veterinary diseases. Novel COVID-19 is an executive name for a new infectious respiratory disease. This virus was first recognized in late December 2019 in Wuhan one of the Chinese city and then spread rapidly to all parts of the world [2]. The World health organization declares that it is public health emergency. A general schema of COVID-19 infection leading to disease in the human

host is the agent, which inter through the direct contact and droplet spray in short-range transmission to reach the target organ which is a respiratory system [3, 4]. People with COVID 19 have had a wide range of symptoms ranging from mild to severe illness. It often appears 2-14 days after exposure to the virus (5 days), the common symptoms: high fever, severe headache, dry cough, loss of smell, muscle pain, and shortness or difficult breathing in late-stage (CDC). However, it has been found that the chain of infection can be through practicing poor respiratory etiquette, touching or shaking hand with an infected person, and making

contact with an infected surface or object [1, 5]. Also new evidence supports that the aerosols in the atmosphere are the main vector of community transmission [5]. Currently no effective therapy, so the best measures now are to control the source of infection, early diagnosis, reporting, isolation, supportive treatments, and timely publishing wave information to avoid unnecessary panic [6]. For individuals, good respiratory hygiene fitted mask, ventilation, and avoiding crowded places will help to prevent COVID 19 infection [2, 8]. On march-2020 Sudan was reported the first imported case, then the authority reported many sporadic cases most of them in Khartoum state, and by the end of April the total number of confirmed cases were 275 cases with 22 deaths [8]. There are emphasized on the desired effect of the social distancing depend on the policy adopted by each country, health infrastructure, population behaviour, and their adherence to social isolation and distancing [5]. The Sudanese population joined more than three billion people of the world's population in home Isolation in order to control the spread the spread of novel COVID – 19. This emerging crisis of the covid19 and social isolation measures in many countries is likely to have a psychological and social impact due to fear of transmission of disease and the stress caused by isolation at home.

Sudan is facing huge challenges as the number of infected/positive cases is increasing day by day. Besides worries and anxiety, social distancing could make it even more challenging. Economic crisis, high poverty rate, food insecurity affects over a third of Sudan's population. The poverty rate was reported 36.1 percent of the population falls below the poverty line. 39.9 percent of the urban population and 54.1 percent of the rural population and 25.2% fell in extreme poverty line [9]. Stocking up food supplies with rising prices during lockdown has been hard for many especially for families who depend on a day-by-day income. Although the literature has shown the effect of lockdown on the general population in many countries, the effect of lockdown in African countries especially in Sudan remains scanty. There is limited data on the level of the general population in Sudan to show the effect of the lockdown. Therefore, this study aimed to explore the psychosocial effects of lockdown measures among the Sudanese population during the COVID-19 pandemic and the coping strategies used during the lockdown. Addressing the psychosocial effects and the coping strategies among the Sudanese population might be a worthwhile study and a key in preventing the risk of long-term consequence.

MATERIALS AND METHODS

This is descriptive; a web-based study was adopted to assess the psychosocial effects of lockdown measures on the Sudanese population and the coping strategies during the COVID-19 Pandemic. This study was conducted in Sudan during lockdown from April to

July 2020. Sudan is the third-largest country in Africa with a total population of around 40 million people divided into 18 states of COVID-19 with Khartoum, Aljazeera and Gedaref were among the highest states [9, 11]. All Sudanese people ≥ 18 years old were eligible to participate in the study. The Snowball sampling technique was used to recruit the participants. An electronic questionnaire was developed by the researchers. The survey questionnaire was designed on free google forms software to collect information and distributed through Social network. The questionnaire includes four parts; questions about socio-demographical data, psychological and social effects, and the coping strategies used to adapt to the situation. The Researchers used different methods to examine the validity and reliability of the questionnaire, a panel of five experts from different disciplines (nurses, community physicians, psychologists, Statisticians) evaluated the content and structure of the questions to meet the objectives of the study, and they have accepted the tool. The questionnaire was piloted on 30 Sudanese to assess the tool's clarity, applicability, and cultural acceptability. Necessary corrections and modifications were made to questions that were confusing the respondents. The reliability was calculated by the Cronbach alpha method. The tool has demonstrated good internal consistency and reliability (Cronbach's alpha=0.89). Four-point Likert scale was used to assess the psychosocial responses. Nonparametric tests like Chi-square test, Pearson's Chi-Square correlation coefficient was used to analyze the strength of associations between different socio-demographic data and psychosocial variables. A p-value ≤ 0.05 was considered to be significant for all the tests. For the ethical consideration; the study was approved by the scientific research board and ethics committee at International University of Africa. The purpose of the study was electronically explained clearly on-line informed consent was obtained from all participants.

RESULTS AND DISCUSSION

Table 1 shows that from the total number of respondents 1811 in this study; the majority was from Khartoum State (80%). Two-third were female (64%), most of the age group were 18-26 (42%). Almost half of the respondents were married (49%). The majority had university and post-graduation levels of education (57.6%, 36.4%) respectively. In terms of working status during lockdown around 60 % were not going to work and the rest were either working at home for few hours or some of them their working hours increased even more from home. Around one-fourth of the participants were students (25%), the majority were not able to pursue their study (72%) only around one-fourth study online (28%). On the other hand, around 60 % of the respondent was employed (self-employed, government, or private sector). With regard to the source of income, more than one-fourth (37 %) of the respondents depended on day-by-day income.

Table-1: The participants socio-demographic Characteristics (n=1811)

Characteristics	f	%	Characteristics	f	%
Gender			Occupation		
Male	659	36.4	Student	436	25
female	1152	63.6	Employee	800	42.6
			Free business/ day by day income	315	17.4
			Unemployed/Home duties	168	15
Age (in groups)			Working condition during Lockdown		
18-28	765	42.2	Not working	1083	59.8
29-39	507	28.0	Working at home for few hours	327	18.1
40-49	316	17.4	working out for few hours	158	8.7
50-59	154	9	working hours increased even more	243	13.3
60-70	52	2.9			
>70	17	1			
Marital Status			Nature of the study during lockdown (students)		
Single	870	47.0	Online study	124	28.4
Married	850	48.9	No study	312	71.6
Divorced	68	1.1			
Widowed	23	3			
Educational Level			Stare of residence		
Illiterate	2	.1	Khartoum	1466	80
Elementary	3	.1	Al Jazeera	96	5
Secondary	103	5.6	States of Darfur	60	3.3
University	1044	57.6	Kassala	37	2
Post graduate	659	36.4	Others	152	9.7

Among 1811 respondents shown in Table 2; the majority (63%) feeling scared most of the time, 48 % had negative thoughts, 52 % afraid of catching the

disease, 53 % of the respondent were feeling frustrated, more than 48 % of the respondents feeling lonely and isolated. around 52 % were feeling sad and depressed.

Table-2: Psychological effect of lockdown on Sudanese People during COVID-19 (n=1811)

Statement	Responses	f	%	Chi square	P –value
I feel nervous	All time	138 (7.6%)	7.6	924.560 ^a	.000
	Most of the time	361 (19.9%)	19.9		
	Sometimes	994 (54.9%)	54.9		
	Never	318 (17.6%)	17.6		
I feel scared	All time	444	24.5	735.738 ^b	.000
	Most of the time	1134	62.6		
	Sometimes	233	12.9		
	Never	-	-		
I feel fear and obsessive when touching a person or tools	All time	204	20.4	537.230 ^a	.000
	Most of the time	863	47.7		
	Sometimes	374	20.7		
	Never	370	11.3		
I feel like something terrible is about to happen	All time	255	14.1	136.183 ^a	.000
	Most of the time	492	27.2		
	Sometimes	597	33.0		
	Never	467	25.8		
I feel restless as I have to be on the move	All time	146	8.1	567.286 ^a	.000
	Most of the time	275	15.2		
	Sometimes	778	43.0		
	Never	612	33.8		
Worrying thoughts go through my mind	All time	122	6.7	703.653 ^a	.000
	Most of the time	278	47.8		
	Sometimes	865	15.4		
	Never	546	30.1		
I get sudden feelings of panic attacks	All time	237	13.1	1057.336 ^a	.000
	Most of the time	1	.1		
	Sometimes	735	40.6		
	Never	838	46.3		
I feel sad/ depressed	All time	113	6.2	843.637 ^a	.000
	Most of the time	286	15.8		
	Sometimes	941	52.0		
	Never	471	26.0		

Feel lonely and isolated	All time	169	9.3	441.747 ^a	.000
	Most of the time	299	37.5		
	Sometimes	680	16.5		
	Never	663	36.6		
I am frustrated because of the length of the lockdown period	All time	254	14.0	251.982 ^a	.000
	Most of the time	357	38.9		
	Sometimes	705	19.7		
	Never	495	27.3		
I feel nervous and anxious during sleep	All time	127	7.0	835.677 ^a	.000
	Most of the time	192	10.6		
	Sometimes	619	34.2		
	Never	873	48.2		
I became irritable and moody	All time	165	9.1	549.550 ^a	.000
	Most of the time	261	14.4		
	Sometimes	608	33.6		
	Never	777	42.9		
I am afraid of catching the disease	All time	166	9.2	777.795 ^a	.000
	Most of the time	257	51.6		
	Sometimes	934	14.2		
	Never	454	25.1		
I am afraid of dying from illness	All time	93	5.1	1122.193 ^a	.000
	Most of the time	147	33.5		
	Sometimes	607	8.1		
	Never	964	53.2		
I feel that this disease is like a stigma on the affected person	All time	39	2.2	3371.381 ^a	.10
	Most of the time	45	2.5		
	Sometimes	211	11.7		
	Never	1516	83.7		
I started to use caffeine excessively (e.g tea and coffee, tobacco)	All time	84	4.6	1812.273 ^a	.056
	Most of the time	122	6.7		
	Sometimes	396	21.9		
	Never	1209	66.8		

Table 3 shows the social effect of lockdown. The result indicated an increase in positive relationships within family members in 49% of the respondents, the majority 64% reported reduced livelihood opportunities, 90% reduced outdoor activities and leisure. Also, 64 % reported that lockdown affected their practice of religious rituals during Ramadan time. 69 % of the

respondents reported that the lockdown could negatively affect students 'academic performance. Among married couples; 36 % replied that lockdown had increased the times of intimate relationship and 42 % Increased mutual understanding and harmony between them.

Table-3: The Social effect of lockdown on Sudanese People during COVID-19 (n=1811)

Statement	Responses	f	%	Chi square	P value
The lockdown affected my relationship with my family members positively	Yes	456	48.9	861.974 ^a	0.000
	No	885	25.2		
	To some extent	470	26.0		
The lockdown helps in discussing family issues in a positive way	Yes	867	47.9	208.142 ^b	0.000
	No	368	20.3		
	To some extent	576	31.8		
The lockdown affected my social relationships with others	Yes	741	40.9	47.196 ^b	0.000
	No	545	30.1		
	To some extent	525	29.0		
Increased family problems and arguments because of it	Yes	172	9.5	1312.957	0.080
	No	1326	73.2		
	To some extent	313	17.3		
Increased fights between children	Yes	388	21.4	400.971 ^b	0.000
	No	1005	55.5		
	To some extent	418	23.1		
Reduced livelihood opportunities	Yes	1161	64.1	777.679 ^b	0.000
	No	283	15.6		
	To some extent	367	20.3		
I think the lockdown will negatively affect students 'academic performance	Yes	1248	68.9	1056.975 ^b	0.000
	No	194	10.7		
	To some extent	369	20.4		

Lockdown Reduces opportunities for outdoor activities and leisure	Yes	1645	90.8	2700.886	0.000
	No	39	2.2		
	To some extent	127	7.0		
I Think Lockdown Increases the burden of household activities	Yes	1021	56.4	434.681 ^b	0.000
	No	371	20.5		
	To some extent	419	23.1		
Lockdown affects the practice of religious rituals, especially in Ramadan	Yes	1175	64.9	833.922 ^b	0.000
	No	401	22.1		
	To some extent	235	13.0		
(For married couples) lockdown led to an increase in the number of times of intimate relationships between spouses	Yes	654	36.1	67.469 ^b	0.000
	No	645	35.6		
	To some extent	512	28.3		
(For married couples) Increased mutual understanding and harmony between spouses	Yes	768	42.4	67.469 ^b	0.000
	No	511	28.2		
	To some extent	532	29.4		

The coping strategies used by Sudanese respondents during lockdown shown in Table 4 the majority (64%) Had a stronger connection with God by reading the holy Quran /more prayers 61 % tried positive thinking, 70 % following all necessary measures to protect themselves and others from the

spread of the virus. 51 % practicing their hobbies such as drawing, cooking, reading, 38% Increased sports and home activities. 41 % Stay away from frightening news about disease. 66% spending time on social media, connecting with others / watching TV.

Table-4: Coping strategies used by Sudanese people during lockdown during Covid -19 (n=1811)

Statement	Responses	f	%	Chi square	P-value
Increased sports and home activities	Yes	689	38.0	97.691 ^a	.000
	No	406	22.4		
	To some extent	716	39.5		
Had a stronger connection with God (read Quran /more prayers).	Yes	1153	63.7	897.337 ^a	.000
	No	118	6.5		
	To some extent	540	29.8		
Stay away from frightening news about disease	Yes	746	41.2	87.215 ^a	.000
	No	427	23.6		
	To some extent	638	35.2		
Spending time on social media, connecting with others / watching TV	Yes	1191	65.8	1004.665 ^a	.000
	No	99	5.5		
	To some extent	521	28.8		
Thinking in a positive way	Yes	1108	61.2	754.789 ^a	.000
	No	159	8.8		
	To some extent	544	30.0		
Organizing and managing time in what is useful	Yes	885	48.9	306.412 ^a	.000
	No	281	15.5		
	To some extent	645	35.6		
Get closer to my family members	Yes	1075	59.4	643.310 ^a	.000
	No	202	11.2		
	To some extent	534	29.5		
More Food storage	Yes	638	35.2	12.770 ^a	0.02
	No	532	29.4		
	To some extent	641	35.4		
follow all necessary instructions to prevent this disease	Yes	1284	70.9	1291.383 ^a	.000
	No	57	3.1		
	To some extent	470	26.0		
More entertainment activities and fun with children and family members	Yes	1059	58.5	605.372 ^a	.000
	No	211	11.7		
	To some extent	541	29.9		
Practicing my own hobbies (drawing ,cooking, reading, etc.)	Yes	925	51.1	298.875 ^a	.000
	No	330	18.2		
	To some extent	556	30.7		
More engagement in community activities and awareness to reduce the spread of the pandemic	Yes	478	26.4	114.283 ^a	.000
	No	817	45.1		
	To some extent	516	28.5		
Trying to adapt myself with the situation	Yes	1151	63.6	897.533 ^a	.000
	No	115	6.4		
	To some extent	545	30.1		

Table 5 shows a significant association between some demographic variables and the psychological effects of lockdown on Sudanese people such as age, gender, and occupation with p-value (0.00, 0.046, 0.00) respectively. Also, there was a significant association between age, occupation, and source of

income and the social effect of lockdown. With p-value (0.003, 0.00, 0.03) respectively, No significant associations were found between socio-demographic data and coping strategies during the lockdown.

Table-5: Correlation analysis between study different variables

Variables		Social	Psychological	Coping strategies
Age	Pearson Chi-Square	179.390 ^a	326.934 ^a	156.091 ^a
	Sig (2-sided)	0.003*	.000*	0.060
Gender	Pearson Chi-Square	28.735 ^a	59.752 ^a	35.651 ^a
	Sig (2-sided)	.323	0.046*	.098
Occupation	Pearson Chi-Square	368.734 ^a	576.055 ^a	311.026 ^a
	Sig (2-sided)	0.000*	.000*	.060
Source of income	Pearson Chi-Square	131.822 ^a	187.061 ^a	95.537 ^a
	Sig (2-sided)	.034	0.205	0.711

*statistically significant p-value ≤ 0.05

DISCUSSION

The WHO declared the COVID-19 pandemic to be a global health emergency that could potentially have serious effects on public health, including mental health [11]. The present study explored the psychosocial effects of Sudanese people during the lockdown and their coping strategies used to adapt to the situation. Our study revealed many psychological effects which ranged from fear of the unknown to anxiety, tension, and feelings of isolation, negative thoughts go through their minds, obsession of getting infected with the disease, frustration, and fear of death. These feelings were expected outcomes of the pandemic, but while the pandemic is to blame for such feelings, the media did not help ease the public's tension, with several outlets giving daily reports about incidence and mortality rates. These results also consistent with a study carried out on 1210 respondents in China that discovered high rates of anxiety and depression among the population [12]. Similarly, a study conducted in eleven states in India showed anxiety and depression among the respondents [13]. Further, a study from Egypt reported increase stress, fear, and apprehension among Egyptians [14]. Another nationwide survey including more than 50,000 Chinese respondents reported trauma-related distress symptoms, with women and young adults showing a significantly higher potential for psychological distress [12]. While in Saudi Arabia a study reported a mild to moderate degree of anxiety due to reliable health information and the use of protective measures [15].

Related to the social aspect; Sudanese are very socializing people, relationships were highly valued in their culture, however; lockdown measures could certainly be difficult for them and negatively affected their socialization, interpersonal relationships due to social distancing and banning gatherings particularly during Ramadan celebration and religious activities.

On the other hand, our study revealed that the prolonged lockdown resulted in a lack of livelihoods for some families, especially those who do not have a steady source of income, they depend on the daily income (day/day), which led to the exacerbation of financial problems and the increase of debts, which in turn led to the increase of family problems and conflict, These results are consistent with a study carried out in Australia, Where the study found that the Australian families experiencing economic burden as loss of livelihood and loss of income as a result of confined to their home [16]. Similarly, a study from the United Arabic Emirates reported different psychological effects, increased work stress beside increased financial issues among.

This study surprisingly found some positive effects such as increased opportunities to discuss family-related issues in a positive way as well as increased understanding and harmony among family members besides the support from family members. These findings extend those of confirming that a longer lockdown is an opportunity for families to strengthen family bonds [17].

Due to the pandemic, most educational institutions around the world were temporarily stopped, Sudan included. Our study revealed that 72% of students were unable to pursue their studies; only 28% of students were enrolled in online studies which could be attributed to the lack of e-learning facilities in the Sudanese educational system besides the instability of the electrical supply. Furthermore, considerable socio-economic challenges for many students to access necessary technologies for distance learning at home. The study further revealed that most of the respondents (69%) reported that lockdown measures could negatively affect the students' schools performance similar concerns were confirmed by studies showing the negative effect on both cognitive, non-cognitive skills acquisition and decline in students' academic

performance moreover uncertainty about achievements future career [19-21].

This study also explored the relationship among married couples during lockdown; 36% of the married couples reported having increased sexual relations and 28 % had increased to some extent. Around 70 % reported positive emotional bonding and caring which could be attributed to spending more time with their partners alongside with limitation of social obligation and commitments during the lockdown. Our study is on the line with a survey conducted among participants from three countries aimed to study the effect of the lockdown on their sexual life, which found a positive influence on sexual behavior among respondents that could be attributed to seeking psychological support and intimacy [21]. Strict lockdown measures in Sudan with recurrent unknown duration represent an unprecedented stressful event that potentially could lead to significant psycho-social impact. The most coping strategies used by Sudanese to overcome the stressful situation are by getting closer to God with prayers, reading the holy Quran, and other positive religious activities. This finding is similar to a study done in the UAE which indicated that positive religious coping among Muslims and Christians during COVID-19 could help in reducing the risk of depressive illness [22]. Other coping strategies indicated in this study include; engagement in physical exercise, enjoy household activities hobbies such as cooking, reading. Good time management, getting closer to family members, follow all necessary instructions to protect themselves and others, spending time on social media and communicating with relatives and friends, watching TV, nourishing minds with positive thoughts and ideas, and stay away from frightening news about the disease. These findings also were similar to a study that found potential coping behaviors such as communicating with relatives/friends; physical exercise and take the opportunity to pursue hobbies [23].

LIMITATIONS

Despite all attempts to widely distribute the questionnaire on all available social media platforms, the majority of the respondents were from Khartoum State and most of the respondents were highly educated which therefore could not represent Sudanese in a rural area and/or most of the less – educated people and not on social networks.

CONCLUSIONS

Our study concluded that the lockdown due to the COVID-19 pandemic had indeed adversely affected the majority of the respondents in psychological, social, and economic well-being. However, as a result, many participants tried to employ different positive coping strategies to reduce the stress and to adapt to the situation. Some positive effects were identified in this

study such as increased understanding and harmony among family members as well as increased positive emotional bonding and intimacy between the majorities of married couples. The study findings necessitate further Studies to explore the long-term impact of the lockdown on Sudanese people especially those who lived in rural and hard to reach areas since the COVID-19 crisis is still on the continuum, researchers in this study further suggested expansion of effective counseling, mental health, and social services for Sudanese communities to solve their psychosocial problems with integrated psychological and health interventions. Sudan government, Ministries, and NGOs need to intensify community awareness on COVID-19 preventive measures in all States.

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