

The Implications of COVID-19 Crisis on the Socioeconomic Conditions of Sudanese Families

Amira Y. Badri and Hind A. Bushra

Ahfad University for Women, Sudan

* Correspondence: amirabadri@yahoo.com

Abstract: The pandemic crisis of Covid-19 disturbed the social and the economic systems in which some changes happened during the pandemic and other changes extended subsequently. This paper is reflecting on the Sudan case, a country of a moderate population and large area with poor socioeconomic standard and infrastructure. The paper is based on the analysis of primary data and policy recommendations of an original research undertaken in five States in Sudan during the period Sept.2021-Sept.2022. The sample of the study selected from most five States that were affected by the Corona pandemic, namely: Khartoum State, Gezira State in the Central Region, Kassala State and Gadarif State in the Eastern Region, and Nyala in the South Darfur State of the Western Region. The research built on a quantitative research method, used the questionnaire as a tool for data collection from a sample size of 723 family head-households. The study is gaining a better understanding of the social, economic and health challenges that faced Sudanese households during the COVID-19 lock down and within the pandemic period. The study showed crucial results that the education of children was disturbed due to unavailability of the distance education in schools. In contrast some families maintained the education of the children as enrolled in private schools. In addition, the paper shows how the families used different approaches to educate their children and involve them into traditional informal and formal education ways. Additionally, the results explained the coping strategies with available resources that families used to manage economic crises and how this interferes with children education. Furthermore, the study proposing appropriate social policies and interventions that address the needs of the family in the current and future pandemic crisis.

Keywords: Covid-19 in Sudan; socioeconomic and health policies

1. Introduction

COVID-19 originated in the city of Wuhan in Hubei Province, China, and as the spread of the virus multiplied among humans, it became a global pandemic at the beginning of 2020. (Qiu *et al.*, 2020)). Then after, during the first half of 2020 the pandemic spread all over the world. It was identified as a novel coronavirus (Severe-acute respiratory syndrome 2, or SARS-CoV-2, later named as coronavirus-19 disease or COVID-19 (Q *et al.*, 2020).

One year after the World Health Organization (WHO) declared the COVID-19 pandemic a global concern, the virus continues to have an unexpected impact on human health, life and livelihoods, economies, markets, institutions, community and family relationships were disrupted. As its effects evolve, the pandemic leaves in its wake an enormous level of human suffering, with the global death toll reaching 2.1 million. (WHO, 2020). The effects of the pandemic and the associated infection prevention and control measures adopted to mitigate the effects of the virus have led to an extraordinary decline in the local and international mobility of peoples, multiplied the efforts of health systems,

obstructed millions of students from education, and caused the closure of businesses and factories. The combined effects of this have revitalized what is already considered the worst recession since the Great Depression of 1933. (World Bank, 2020).

Although estimates for 2022 predict a possible recovery, the global economy shrink by 4.3% in 2020 as a result of the COVID-19 pandemic (UN News 2021). The pandemic has also affected socio-economic conditions around the world, particularly in the case of developing economies, increasing the impact among poor households and families with low socio-economic conditions are the most suffering due to the pandemic, although there is a variation in the effects of COVID-19, at the household levels due to differences in the social and economic indicators of the family with demographic, environmental and political differences.

The virus pandemic in Sudan has exacerbated the critical situation of the country's economy and social life and weakened the family and its relationships. Many Sudanese families have faced economic hardship, especially those who depend on daily wage from the informal labour market, and are estimated at 42% of Sudanese households (CMI, 2020). In Sudan, family relationships are highly valued and continue to support the extended family and solidarity system. Hence the pandemic has disrupted this social system, which has pushed most families to meet new challenges and adopt new adaptation strategies.

This study sheds light on how Sudanese families are dealing with the economic hardships and the new social lifestyle involved in the coronavirus pandemic; and how families deal with and benefit from government and community protection measures. The main objective focuses on how the coronavirus affects the family cohesion system and standard of living, taking into account social, psychological, economic, health and educational aspects. The results of the research will highlight the difficulties and challenges faced and draw up policies that benefit decision-makers and professionals in the health, educational and economic fields to confront epidemics and their crises.

2. Literature review

A survey of health services in the African region conducted in March 2020 based on self-reports from 47 countries to the World Health Organization revealed that there are an average of nine beds in intensive care units per million people, these would be woefully inadequate. In addition, physical access to these public services for the population is very low, suggesting that many people will not have the opportunity to access the required care (WHO,2020; AH. 2020].

A WHO study in Africa found that 190 to 83,000 people died from COVID-19 and 29 million to 44 million could be infected in the first year of the pandemic if containment measures fail. The study, based on a prediction model, also found 47 countries in the WHO's Africa region with a total population of one million. It was estimated 3.6-5.5 million COVID-19 hospitalizations, of which 82,000-167,000 were serious cases required oxygen, and 52,000-107,000 critical cases needed breathing support (<http://whotogo>, 2020).

In general, African countries suffer from weak health systems and this remains a concern, especially in the case of an increased outbreak (Ohia C, Bakarey AS, Ahmad T., 2020).

In the Arab region, with twenty-two Arab countries account for nearly 6% of the world's population, yet they make up only 5% of total cases and less than 3% of the world's population (Ritchie RM, et al, 2020). Although there are significant differences between the 22 Arabic countries in terms of their health systems and available resources in the face of the pandemic, the region as a whole is ill-prepared to deal with the impact of a contagious and deadly disease such as COVID-19, which is spreading rapidly around the Arab Region, In most countries, except for the Arabic Gulf states, the reasons are related to the lack of material resources, the high government expenditure in other resources such as defence and security, the imbalance in the performance of public health institutions, mismanagement, brain drain, lack of transparency in the transfer of information and crisis management, lack of trust in the authorities, armed conflicts, population displacement due to wars, and other direct and indirect causes.

3. Research aim and objectives

The purpose of the study was to understand and analyse the concepts, factors, trends and practices followed by the Sudanese families during the pandemic period and how to deal with the social, economic and psychological effects and assess the situation, including the contributions of the state and society, in order to develop policies and interventions to face the epidemic crises in the future. The specific objectives of the study are:

1. Explore and gain a better understanding of the social, economic and health challenges facing Sudanese families due to COVID-19;
2. Study the effects of distance/social isolation on social relations between Sudanese nuclear and extended families;
3. Learn about coping strategies and available resources used by families to manage crises;
4. Suggest appropriate social policies and programmatic interventions that address the needs of the family in the current and future pandemic conditions.

4. Research methods

This study is classified as descriptive and analytical research. The basic research methods used was the quantitative method, The survey used stratified random sampling method to select about 700 households distributed over five states of Sudan (Al-Jazira, Nyala, Gedarif, Kassala and Khartoum). The states were identified according to the most exposed to the epidemic and the most densely populated. The sample also took into account diversity in demographics. Hence a stratified cluster random sample was applied. A sample of 734 households were selected from the five States using stratified random method and in some areas a cluster sample were applied. A close-ended questionnaire was designed and tested. For the verification of the tool, a preliminary test of the questionnaire was performed to confirm Its reliability, consistency, accuracy and effectiveness.

Data collection team composed of nine B.Sc and Master's holders with different specializations and geographical location. A meeting was prepared to clarify and discuss information collection tool. Then a training workshop on information collection tool, distribution of 30 questionnaires for testing and arbitration, which also gives a training opportunity for information collectors and modification of the questionnaire. The form has been modified and adapted to the situation and level of the Sudanese family to ensure accurate information. Adequate, correct, integrated and consistent questionnaire was confirmed with the objectives of the study. Information collection supplies were available from physical tools to facilitate the process and complete it on time. The quantitative data was analyzed statistically using the SSPS package, which provided real statistical information revealing the objectives of the study.

5. The results

The results of the field survey were that most of the respondents from educated groups, university and high school, aged between 25 to 60 years, work in the government or private sector and a minority of them are self-employed. The results found a convergence between the states, especially between the states of Khartoum, Gezira and Gedarif, while some differences between the states of Kassala and Nyala. Perhaps the explanation is that the three states are suffering from the spread of the epidemic, as are highly populated, with better infrastructure, employability; and, are relatively large compared to the states of Kassala and South Darfur/Nyala.

Demographic characteristics of the respondents can be explained in the following tables (Tables 1,2,3,4,5 &6):

Table 1. Distribution of respondents according to gender

It is found that the percentage of females who represent the main breadwinner of the family is higher than the percentage of males in all states surveyed except the state of Gezira. This indicates that there has been a social change in Sudanese society as a result of economic factors such as male migration to find better job opportunities, or as a result of political and tribal factors such as tribal

conflicts and wars that have led to the loss of many males of households. It can also be seen that most women are the most responsive.

	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Male	83	26.1	64	62.1	37	37.0	30	29.1	35	35.0
Female	235	73.9	39	37.9	63	63.0	73	70.9	65	65.0
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	100.0

Table2. Distribution of respondents according to Age

Age groups	Khartoum		AlGazeera		Kassala		Gadaref		S. Darfur	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
From 20 to 30	34	10.7	8	7.8	12	12.0	10	9.7	17	17.0
31to 40	105	33.0	31	30.1	34	34.0	33	32.0	21	21.0
41 to 50	81	25.5	34	33.0	36	36.0	37	35.9	35	35.0
51to60	50	15.7	19	18.4	16	16.0	15	14.6	17	17.0
60 +	48	15.1	11	10.7	2	2.0	8	7.8	10	10.0
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	.0010

The majorities of respondents are in productive age in all States which indicates the its relation with the pandemic and its impact on the economy.

Table 3. Distribution of respondents according to social status

Social status	Khartoum		AlGazeera		Kassala		Gadaref		S. Darfur	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Married	281	88.4	95	92.2	89	89.0	85	82.5	88	88.0
Ivorced	18	5.7	1	1.0	3	3.0	10	9.7	3	3.0
Widow	19	6.0	7	6.8	8	8.0	8	7.8	9	9.0
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	100.0

In the above results, we find that most of the targeted people (88%) are married while the rest have marital status ranging between divorced and widowed. This indicates that all members of the target group have families (husband + wife + children) who are responsible for them. Therefore, the research team was keen to diversify the choice of the type of family in order to reflect the extent to how the various structures face the pandemic. The results also showed that most families are characterized by stability and a few have a single parent.

Table 4. Distribution of respondents according to level of education

Educational Level	Khartoum		AlGazeera		Kassala		Gadarif		S. Darfur	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Islamic Pre-school	11	3.5	5	4.9	6	6.0	8	7.8	10	10.0
Primary	14	4.4	6	5.8	14	14.0	18	17.5	5	5.0
Intermediate	17	5.3	6	5.8	4	4.0	11	10.7	5	5.0
Secondary	51	16.0	13	12.6	13	13.0	12	11.7	13	13.0

University	113	35.5	29	28.2	48	48.0	42	40.8	54	54.0
Postgraduate	112	35.2	44	42.7	15	15.0	12	11.7	13	13.0
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	100.0

Nature of work	Khartoum		AlGazeera		Kassala		Gadarif		S. Darfur		As for the educational level of the target group, we find that the results indicate that most of the targeted people are at the university level (54%), followed by secondary (13%) and post-university groups (13%), while the
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Employee in private sector	181	56.9	3	2.9	7	7.0	10	9.7	13	13.0	
Public Sector Employee	40	12.6	94	91.3	86	86.0	72	69.9	45	45.0	
Self-employed/business	45	14.2	6	5.8	6	6.0	14	13.6	24	24.0	
Voluntary organization	2	.6	0	.0	0	.0	4	3.9	4	4.0	
I don't work	50	15.7	0	0.0	1	1.0	3	2.9	14	14.0	
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	100.0	

rest of the target group have an average level of education (5%) down to solitude (Islamic/memorizing the Qur'an). These results indicate that the respondents aware about the pandemic, can raise awareness of their children, and, precautiously by rules. Additionally. High level of respondents education, refer to the fact that the targeted people live in or near cities and work in public and private institutions.

Table 5. Distribution of respondents to type of work

Salary In pounds	Khartoum		AlGazeera		Kassala		Gadarif		S. Darfur	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Less than 10,000	17	5.3	11	10.7	22	22.0	26	25.2	22	22.0
From 10 to 20 thousand	121	38.1	37	35.9	67	67.0	56	54.4	41	41.0
More than 20,000	129	40.6	55	53.4	10	10.0	18	17.5	25	25.0
No salary	51	16.0	0	0.0	1	1.0	3	2.9	12	12.0
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	100.0

Table 6. Distribution of respondents according to income level

The table above, shows that 67%, 54.4%, 41%, target people whose monthly income ranges from 10,000 to 20,000 Sudanese pounds in Kassala State, Gedarif, and South Darfur. Compared to the two states of Gezira and Khartoum, while that most of the targeted people are 53.4%, 40.6% represent their monthly income of more than 20 thousand. These results indicate the difference in sources of income as noted in the previous table (No. 5) and also the difference in the nature of work and the consequence of a difference in the rates of monthly salary, and that most of the targeted in Khartoum State work in the private sector .

The main findings discussed that most households in the five states did not practice remote work for a long time during the pandemic. Hence, the financial and economic situation are greatly negatively affected during the lock out. The tables (7), (8) and (9) below show the situation of work and economy of the family members and household.

Table 7. Distribution of respondents according to the performance of remote work (at home).

performance of remote work	Khartoum		AlGazeera		Kassala		Gadaref		S. Darfur	
	F	Percent	F	Percent	F	Percent	F	Percent	F	Percent
Yes	58	18.2	20	19.4	17	17.0	43	41.7	29	29.0
Sometimes	86	27.0	35	34.0	33	33.0	18	17.5	18	18.0
No	156	49.1	45	43.7	39	39.0	41	39.8	46	46.0
Not applicable	18	5.7	3	2.9	11	11.0	1	1.0	7	7.0
Total	318	100.0	103	100.0	100	100.0	103	100.0	100	100.0

Table 8. Distribution of respondents according to the impact of the coronavirus outbreak on the economic condition .

Influence of Corona crisis on the economic situation	Khartoum		AlGazeera		Kassala		Gadaref		S. Darfur	
	F	Percent	F	Percent	F	Percent	F	Percent	F	Percent
Job loss	19	6.0	6	5.8	4	4.0	7	6.8	4	4.0
Real estate loss	1	.3	5	4.9	3	3.0	1	1.0	1	1.0
Production loss	40	12.6	10	9.7	5	5.0	9	8.7	9	9.0
Loss of marketing	13	4.1	3	2.9	14	14.0	6	5.8	7	7.0
Income loss	206	64.8	74	71.8	69	69.0	72	69.9	75	75.0
Not affected	39	12.3	5	4.9	95	95.0	8	7.8	2	2.0
Total	318	100.0	103	100.0	5	5.0	103	100.0	98	98.0

Table 9. Distribution of the respondents according to their views to financial situation.

Degree of Financial loss	Khartoum		AlGazeera		Kassala		Gadaref		S. Darfur	
	F	Percent	F	Percent	F	Percent	F	Percent	F	Percent
Great	142	44.7	53	51.5	26	26.0	44	42.7	54	54.0
Moderate	127	39.9	30	29.1	68	68.0	33	32.0	41	41.0
No harm	48	15.1	19	18.4	4	4.0	26	25.2	5	5.0
Total	317	99.7	102	99.0	98	98.0	103	100.0	100	100.0
Missing	1	.3	1	1.0	2	2.0				

Thus, as for productivity in general, there was a decrease in productivity, due to the lack of permanent work and also the difficulty of working from home. With regard to the impact of Corona on the level of individual income, most of the respondents in the five states confirm that individual income is the most influential, especially in the first year of the epidemic, accompanied by an increase in unexpected family expenses due to the rise in prices and the increase in family requirements, especially the provision of epidemic prevention supplies such as masks, sterilizers and vitamins.

Table 10. Distribution of respondents according to the extent to which children are aware of the existence of this virus.

Awareness of children to the virus		State					Total
		Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur	
Full Perception	Count	163	52	44	78	64	401
	%	51.3	50.5	44.0	75.7	64.0	55.4
	Count	76	35	22	12	18	163

Moderately aware	%	23.9	34.0	22.0	11.7	18.0	22.5
Less awareness	Count	41	11	13	13	10	88
	%	12.9	10.7	13.0	12.6	10.0	12.2
No perception	Count	38	5	21	0	8	72
	%	11.9	4.9	21.0	0.0	8.0	9.9
Total	Count	318	103	100	103	100	724
	%	100.0	100.0	100.0	100.0	100.0	100.0

Regarding the awareness and knowledge of children about the Corona virus, the table (10) above illustrates more than half of the sample members confirm that there is knowledge of the epidemic and methods of prevention, and this confirms that perception of the virus disease is global and Sudan was keen on this through the media in particular. According to the table (5) below, it was found that the negative impact was very large, that more than half of the respondents in the targeted states did not use distance learning. This affected the educational level of children, especially the young ones. Some families, allow adults to give lessons to their young siblings and encouraged them to continue reading their text books.

Table 11. Distribution of respondents according to the impact of the outbreak of the epidemic on children's education.

Impact on the education of children		States					Total
		Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur	
significant positive effect	Count	10	6	19	9	7	51
	%	3.1%	5.8%	19.0%	8.7%	7.0%	7.0%
Negative impact	Count	208	40	37	46	71	402
	%	65.4%	38.8%	37.0%	44.7%	71.0%	55.5%
Moderate Positive effect	Count	21	28	15	21	8	93
	%	6.6%	27.2%	15.0%	20.4%	8.0%	12.8%
Moderate Negative impact	Count	37	18	12	7	7	81
	%	11.6%	17.5%	12.0%	6.8%	7.0%	11.2%
The children were not affected	Count	42	11	17	20	7	97
	%	13.2%	10.7%	17.0%	19.4%	7.0%	13.4%
Total	Count	318	103	100	103	100	724
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Result found that the negative impact rate for all states represented 55%, where the states of South Darfur and Khartoum represented the highest rates of 71% and 64%, respectively. The respondents confirmed that their children were negatively affected by the outbreak of this disease, especially due to the complete closure of schools. This means that most school children did not participate in any of the learning activities during the lockdown. This made the children not receive any kind of education for a long period of more than three months.

Table 12. Distribution of respondents according to the extent of benefit from the distance education experience.

Preserved benefit from distance education		States					Total
		Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur	
Very useful	Count	31	12	0	8	6	57
	%	9.7%	11.7%	0.0%	7.8%	6.0%	7.9%
Useful	Count	52	12	22	9	11	106
	%	16.4%	11.7%	22.0%	8.7%	11.0%	14.6%
Moderately	Count	77	27	35	24	12	175
	%	24.2%	26.2%	35.0%	23.3%	12.0%	24.2%
Did not used	Count	158	52	43	62	71	386
	%	49.7%	50.5%	43.0%	60.2%	71.0%	53.3%
Total	Count	318	103	100	103	100	724

% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%

Many respondents noted that the most disadvantaged students as a result of Covid-19 are poor and geographically distant students. Basic school students in rural areas who do not have electricity, are most likely to be deprived of school closures in many areas. Another barrier to the lack of benefit from the distance learning experience is that the majority of students live in small houses, and there is unlikely to be a quiet room or other suitable space to study. The results also found that a lack of training and professional development for teachers regarding the inclusion of technology in teaching made teachers ill-equipped to respond effectively to changes and introduce distance learning to schools.

Table 13. Distribution of respondents according to the extent of impact on marital relations during the ban period.

States	Khartou m AlGazeer a Kassala Gadaref S. Darfur						Total
	Yes	F	41	16	12	7	
	%	12.9%	15.5%	12.0%	6.8%	15.0%	12.6%
Little	F	88	35	43	42	36	244
	%	27.7%	34.0%	43.0%	40.8%	36.0%	33.7%
No	F	172	43	37	46	40	338
	%	54.1%	41.7%	37.0%	44.7%	40.0%	46.7%
Not applicable	F	17	9	8	8	9	51
	%	5.3%	8.7%	8.0%	7.8%	9.0%	7.0%
Total	F	318	103	100	103	100	724
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Regarding the interpretation of the concept of “social distancing”, more than half of the respondents define it, as leaving distance between people, not mixing, avoid crowding, and gathering. A few of them indicated that social distance was applied among their families. Most respondents confirmed that the relationship between them and their relatives was a moderate to normal relationship.

Table 14. Distribution of respondents according to the extent of impact on marital relations during the ban period.

States	Khartoum AlGazeera Kassala Gadaref S. Darfur						Total
Yes	F	41	16	12	7	15	91
	%	12.9%	15.5%	12.0%	6.8%	15.0%	12.6%
Little	F	88	35	43	42	36	244
	%	27.7%	34.0%	43.0%	40.8%	36.0%	33.7%
No	F	172	43	37	46	40	338
	%	54.1%	41.7%	37.0%	44.7%	40.0%	46.7%
Not applicable	F	17	9	8	8	9	51
	%	5.3%	8.7%	8.0%	7.8%	9.0%	7.0%
Total	F	318	103	100	103	100	724
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 15. Distribution of respondents according to the occurrence of infection of family members

Number of Family members infected with the virus	States						Total
	Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur		
Yes	Count	112	44	51	40	23	270
	%	35.2	42.7	51.0	38.8	23.0	37.3
No	Count	206	59	49	63	77	454

	%	64.8	57.3	49.0	61.2	77.0	62.7
Total	Count	318	103	100	103	100	724
	%	100.0	100.0	100.0	100.0	100.0	100.0

The idea of social distancing for the Sudanese was one of the most difficult protection strategies against the Corona virus. With regard to the means of protection mostly used by families, it was found that the mask is a common one used precautionary measure, followed by not shaking hands, and, a few washing hands. Regarding the change in the family structure and family relations during this experiment, the respondents confirmed that the percentage of family cohesion was increased, especially within the nuclear family, as a result of the presence of all family members at home all the day, especially during the closure period. This led to an opportunity to get acquainted and exchange opinions and ideas. However, there were negative aspects represented in feeling very afraid and psychological instability, in addition to a temporary change in some family customs and traditions, such as using virtual communication instead of visits and avoiding social gatherings. With the presence of psychological cases, it is found that about half of the respondents praised their presence among families, especially the states of Khartoum and Gedarif, while the other half indicated that there are no psychological cases among the family. Fear and anxiety are among the most common situations that families experienced, followed by social isolation.

Data revealed that the vast majority of respondents did not resort to any physician or psychological counselling during the Corona pandemic, while a very simple category came to a general doctor, an epidemiologist and / or seek psychological counsellor. These results indicated in table 10 below that there are two possibilities for not communicating with one of the doctors, the first is that the respondents did not need to go to a doctor, while the other possibility is fear and psychological anxiety of injury or feeling stigmatized.

Table 16. Visit of family members to a doctor.

Visit of a family member to a doctor		State					Total
		Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur	
Psychiatric	Count	5	0	0	0	0	5
	%	1.6%	0.0%	0.0%	0.0%	0.0%	.7%
Epidemiology	Count	10	4	5	5	6	30
	%	3.1%	3.9%	5.0%	4.9%	6.0%	4.1%
Psychologist	Count	4	1	4	1	2	12
	%	1.3%	1.0%	4.0%	1.0%	2.0%	1.7%
General physician	Count	55	10	15	14	11	105
	%	17.3%	9.7%	15.0%	13.6%	11.0%	14.5%
No, I didn't go	Count	244	88	76	83	81	572
	%	76.7%	85.4%	76.0%	80.6%	81.0%	79.0%
Total	Count	318	103	100	103	100	724
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

It was noted that about half of the respondents (50.3%) praised the existence of psychological conditions represented in fear and anxiety among families, while the other half indicated that they do not exist. It is clear from the analysis that the percentage of those who were not infected is high, which confirms the existence of cases of anxiety and distress.

Table 17. psychological incidence occurred as result of the epidemic.

Type of psychological state in families		State					Total
		Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur	
Depression	Count	26	3	0	4	0	33
	%	16.0%	6.3%	0.0%	10.5%	0.0%	9.1%
Fear and anxiety	Count	103	37	60	26	44	270
	%	63.6%	77.1%	92.3%	68.4%	86.3%	74.2%
Social isolation	Count	25	4	1	5	5	40
	%	15.4%	8.3%	1.5%	13.2%	9.8%	11.0%

General weakness	Count	5	2	4	3	1	15
	%	3.1%	4.2%	6.2%	7.9%	2.0%	4.1%
Malnutrition	Count	1	1	0	0	1	3
	%	.6%	2.1%	0.0%	0.0%	2.0%	.8%
Dymensia	Count	2	1	0	0	0	3
	%	1.2%	2.1%	0.0%	0.0%	0.0%	.8%
Total	Count	162	48	65	38	51	364
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 18. Health services available for people infected with the virus.

Health services available for the virus treatment	State						Total
	Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur		
Oxygen	Count	55	10	34	25	19	143
	%	17.3%	9.7%	34.0%	24.3%	19.0%	19.8%
Vitamin C	Count	9	3	19	0	5	36
	%	2.8%	2.9%	19.0%	0.0%	5.0%	5.0%
Vitamin. D	Count	10	0	14	0	0	24
	%	3.1%	0.0%	14.0%	0.0%	0.0%	3.3%
Zinc	Count	7	1	1	1	0	10
	%	2.2%	1.0%	1.0%	1.0%	0.0%	1.4%
Antibiotic	Count	14	2	0	3	4	23
	%	4.4%	1.9%	0.0%	2.9%	4.0%	3.2%
Panadol	Count	47	7	0	4	11	69
	%	14.8%	6.8%	0.0%	3.9%	11.0%	9.5%
Oxygen and Panadol	Count	24	7	0	3	8	42
	%	7.5%	6.8%	0.0%	2.9%	8.0%	5.8%
Oxygen Panadol and Vitamin C	Count	52	13	3	17	9	94
	%	16.4%	12.6%	3.0%	16.5%	9.0%	13.0%
Oxygen And antibiotics	Count	11	5	0	11	6	33
	%	3.5%	4.9%	0.0%	10.7%	6.0%	4.6%
All medicines	Count	14	0	1	1	0	16
	%	4.4%	0.0%	1.0%	1.0%	0.0%	2.2%
I do not know	Count	58	52	27	36	38	211
	%	18.2%	50.5%	27.0%	35.0%	38.0%	29.1%
No services available within theولاية	Count	15	0	0	1	0	16
	%	4.7%	0.0%	0.0%	1.0%	0.0%	2.2%
no isolation center nearby	Count	2	3	1	1	0	7
	%	.6%	2.9%	1.0%	1.0%	0.0%	1.0%
Total	Count	318	103	100	103	100	724
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table (18) above showed the health services available to those infected with the virus, 29% of the respondents noted that have no information about the quality of services available to the injured, while 8% of them said oxygen is the available service, 13% indicated that oxygen, Panadol and vitamin C are the available services. These results indicate

that raising awareness of the availability of medical services was not a priority, as each individual or family seeks knowledge according to their need for service. This indicates the weakness of the official bodies and the media in disseminating information about the available services and distributing them to the public.

As for community support, table 19 below revealed that, the minority of respondents confirmed that there was community support represented in spreading awareness and announcements to clarify the risks of the epidemic. Most respondents in the states of Khartoum and Kassala confirmed that the urgent services provided were comprehensive vaccination, free examination (free), providing isolation centres in hospitals, ensuring the spacing of students in classes and applying precautions inside schools.

Table 19. The role of society in serving families for the prevention and treatment of the virus.

Community role in serving families for the prevention and treatment of the virus		State					Total
		Khartoum	AlGazeera	Kassala	Gadaref	S. Darfur	
Enlightenment using masks	Count	21			100		121
	%	68.0			%100		16.7
general awareness	Count	102	75	44			221
	%	32.0	72.8	44			30.5
Help prevent gatherings	Count	53	21				74
	%	16.7	20.4				10.2
Closure of mosques	Count	13		23			36
	%	4		23			5
Closing the markets	Count	18					18
	%	5.7					2.5
The resistance committees provided bread	Count	40					40
	%	12.6					5.5
There is no response or active role from the community	Count	71	7	33		100	29.1
	%	22.3	6.8	33		100	
Total	Count	318	103	100	103	100	724
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Finally, the results also indicated the development of future policies to manage regular work and the economic situation during epidemics and health crises.

6. Policies

Comprehensive collaboration between the public and private sectors and the civic and community bodies must be established to put clear strategies and policies to combat pandemic diseases. Urgent policies for pandemic diseases in Sudan should be clearly articulated dealing with prevention from epidemic and pandemic diseases, preparation of pandemic centres as part of Primary health care sections; provisions of health education for the community about prevention and treatment of pandemic diseases.

Proposed policies that must be put in place to protect the family with regard to education, work, health and family cohesion due to the Corona epidemic. One of the most important policies that must be developed to protect the family is the provision of distance education, monitoring and emphasizing distancing, and the recovery of the mental health of family members by strengthening family relations and ensuring their cohesion, and providing treatment, awareness and guidance among family members. The economic situation has good economic planning and appropriate for all productive and investment sectors. The study also stressed the importance of developing policies for the provision of medical inputs such as masks, sterilizers and vitamins, distributing them free of charge to poor families and in workplaces, especially markets.

Additionally, most of the respondents in the States emphasised that the policies that must be urgently approved are:

- Comprehensive vaccination, provision of means of examination (free of charge),
- provision of isolation centres and hospitals,

- Distance education in some cases, distancing in classes and the application of precautions
- Attention to awareness of mental health and psychotherapy in cases of fear and anxiety among students of all stages.
- Change in the patterns of extended family relationships through communication via telephone and WhatsApp.
- Work and the economic situation through the full emphasis on continuing to work and not interrupting in cases of crisis, providing alternatives to work for informal employers.

7. Recommendations

1. Training intermediate health cadres and health guidance and education specialists on how to deal with health crises and epidemics
2. Training civil society on methods of prevention and protection from health crises and epidemics.
3. Intensifying family awareness regarding the disease of the epidemic of the crow.
4. Fighting wrong habits and practices that contradict epidemiological health precautions.
5. The family's commitment to change some customs and traditions that are in the interest of the well-being of the family and society.
6. The family's keenness to seek sources of investment and savings to ensure the well-being of the family, especially when facing emergency crises.
7. Conducting more applied research studies on family relations, family economics and family protection.
8. Encouraging voluntary organizations and associations to work in increasing the income of families to face crisis situations.
9. Using various media in awareness campaigns and health, psychological and family support.
10. Providing educational services in holding continuous lessons and activities through clubs and schools.
11. Encourage decision makers and policy makers to develop precautionary and predictive policies for such rapidly spreading epidemics and infections.
12. Improving the level of epidemiological isolation centres and providing services in health centres in public neighbourhoods.
13. **Developing health services and systems**, especially enhancing data management and its use in policy-making, planning and decision-making processes.
14. **Community Protection**: Social protection and the provision of basic services, including food, nutrition and awareness services.
15. **Labour market**: protecting jobs and promoting decent work for citizens, especially in the informal sector. Protect SMEs, farmers and the most vulnerable productive sectors.

References

- 1) Ahmed et al 2021, COVID-19 in Sudan, paper published in Journal of Infection in Developing Countries (JIDC).
- 2) Arab Trade Union and Danish trade union, 2020, The Economic and Social Impacts of the Corona Pandemic in the Arab Countries, Arab Trade Union Confederation (ATUC).
- 3) Department of Economic and Social Affairs Social Inclusion (UN DESA)2020, The Social Impact of COVID-19, <https://www.un.org/development/desa/dspd/2020/04/>.
- 4) Daw MA, El-Bouzedi AH. 2020, Modelling the epidemic spread of COVID19 virus infection in Northern African countries. Travel Med Infect Dis. 2020;101671, Epub 2020/04/19. doi:10.1016/j.tmaid.2020.101671. PubMed PMID: 32304743; PubMed Central PMCID: PMC7159847 disclosure. [Google Scholar.
- 5) Geldsetzer P. 2020, Use of rapid online surveys to assess people's perceptions during infectious disease outbreaks: a cross-sectional survey on COVID-19. J Med Internet Res.;22(4):e18790, Epub 2020/04/03. doi:10.2196/18790. PubMed PMID: 32240094; PubMed Central PMCID: PMC7124956.
- 6) HCT/UNCT, 2020, Sudan CORONA Virus-COVID19 Country Preparedness and Response Plan-CPRP.
- 7) Hind Bushra and Amira Badri. 2020. A sociocultural analysis to knowledge and attitudes of Sudanese society towards Covid-19. Unpublished paper.

- 8) John Hopkins University. (2020b, May). Mortality Analyses. Johns Hopkins Coronavirus Resource Centre. <https://coronavirus.jhu.edu/data/mortality>.
- 9) Ohia C, Bakarey AS, Ahmad T., 2020, COVID-19 and Nigeria: putting the realities in context. Int J Infect Dis: IJID: Off Publ Int Soc Infect Dis. 2020;95:279–281. Epub 2020/05/01. doi:10.1016/j.ijid.2020.04.062. PubMed PMID: 32353547; PubMed Central PMCID: PMC7184999. [Crossref], [Web of Science®], [Google Scholar].
- 10) OCHA, 2020, The country continues to face the health and humanitarian consequences of COVID-19. <https://reports.unocha.org/en/country/sudan/card>.
- 11) Soad Musa; Rasis Alanzi; Rehab Nori. 2021. The Psychosocial reactions to Covid-19 among individuals in the Arab World. European Journal of Social Science Education and Research; January-April, Vol.4; issue ; PP76-88.
- 12) Ritchie RM, Ortiz-Ospina H, Hasell E. 2020, Coronavirus Pandemic (COVID-19). OurWorldInData.org. Available from: <https://ourworldindata.org/coronavirus>/Accessed March 8, 2021.
- 13) Qiu, Y., Chen, X., & Shi, W. (2020). Impacts of Social and Economic Factors on the Transmission of Coronavirus Disease 2019 (COVID-19) in China (Working Paper 494 [pre.]). GLO Discussion Paper. <https://www.econstor.eu/handle/10419/215739>.
- 14) UNFPA, 2017, Population Dynamics of Sudan.
- 15) University of Oxford ,2020, The economic impact of COVID-19, <https://www.research.ox.ac.uk/article/2020-04-07>.
- 16) World Bank, 2020, The Status of the Education Sector in Sudan, World Bank Group.
- 17) <http://www.oecd.org/coronavirus/policy-responses/building-resilience-tothe-covid-19-pandemic-the-role-of-centres-of-government-883d2961/>.

