

The Relation Between Anxiety Disorder and Lock-down Procedures of COVID-19 Among Sudanese

العلاقة بين اضطراب القلق وإجراءات الإغلاق لمواجهة فيروس كورونا (كوفيد - 19) لدى السودانيين

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المخلص

هدفت الدراسة الكشف عن العلاقة بين اضطراب القلق وإجراءات الإغلاق بسبب فيروس كورونا لدى السودانيين. وتكونت عينة الدراسة من (204) فرداً من السودان. ولتحقيق أهداف الدراسة، استخدم المنهج الوصفي الارتباطي، واستبانة إجراءات الإغلاق لمواجهة فيروس كورونا، ومقياس اضطراب القلق المستخرج من قائمة مقياس شاشة الأعراض العصبية. أظهرت النتائج وجود علاقة ارتباطية إيجابية بين اضطراب القلق وإجراءات الإغلاق لمواجهة فيروس كورونا، ووجود فروق في تأثير إجراءات الإغلاق لدى السودانيين، وكانت أكثر الإجراءات تأثيراً: تعليق زيارة الحرمين، ومنع السفر، وتعليق الصلاة في المساجد، وأظهرت النتائج عدم وجود فروق في اضطراب القلق تبعاً لمتغيري الاغتراب عن الوطن، ومتغير الدخل، ووجود فروق في اضطراب القلق تبعاً للتفاعل بين متغيري الاغتراب عن الوطن والدخل، وكانت أكثر الفئات قلقاً لغير المغتربين من ذوي الدخل المرتفع، والمغتربين من ذوي الدخل المتوسط، ووجود فروق في اضطراب القلق حسب متغيري الجنس والوظيفة، والتفاعل بينهما، الجنس والوظيفة، وقد كانت أكثر الفئات قلقاً، النساء العاملات في القطاع الإداري، والرجال العاملون في القطاع الصحي، ووجود فروق في تأثير إجراءات الإغلاق على أفراد العينة وفقاً لمتغيري الجنس والعمر، والتفاعل بينهما، وكانت أكثر الفئات تأثراً هي النساء في الفئة العمرية (50) عام وما فوق، ثم النساء في المجموعة ذوات الفئة العمرية من (40-49) عاماً، ثم الرجال ذوات الفئة العمرية (40-49) عاماً.

الكلمات المفتاحية: اضطراب القلق، إجراءات الإغلاق، فيروس كورونا، السودانيين.

Abstract

The study aims to reveal the relationship between anxiety disorder and lockdown procedures of COVID-19 among the Sudanese. The study sample consists of 204 individuals from Sudan. To achieve the study objectives, the descriptive-correlational approach, a questionnaire about lockdown procedures to confront the COVID-19 virus, and the anxiety disorder scale extracted from the neurological symptoms screen scale

were used.

The results show a positive correlation between anxiety disorder and COVID-19 lockdown procedures. There are differences in the impact of lockdown procedures among the Sudanese. The most influential procedures are: suspending visits to the Two Holy Mosques, preventing travel, and suspending prayers in mosques. The results show no differences in anxiety disorder due to the expatriation and income variables. There are differences in anxiety disorder due to the interaction between expatriation and income variables, in favor of non-expatriates with high incomes and expatriates with middle incomes. Moreover, there are differences in anxiety disorder due to gender and job variables and the interaction between them, in favor of women working in the administrative sector, and men working in the health sector. There are also differences in the impact of lockdown procedures on the sample members due to gender and age variables and the interaction between them, in favor of women in the age group 50 years and above, then women in the age group ranging from 40-49 years, then men in the age group from 40 to 49 years.

Keywords: Anxiety disorder, lockdown procedures, COVID-19 virus, Sudanese.

Introduction

The current era is experiencing an unprecedented major health crisis, COVID-19, which appeared in China at the end of 2019. After a very short period, it began to spread very quickly throughout the countries of the world. As a result, most countries sought to put preventive procedures in order to limit and reduce the number of infections and deaths. The most important of these procedures are complete lockdown and curfew. These procedures limited individuals' movement and traveling, making them vulnerable to various physical and psychological problems and disorders, the most important of which is anxiety disorder.

Anxiety disorder is considered one of the disorders that affect the individual as a result of exposure to a situation. Anxiety may cause a psychological state that involves bad feelings, similar to the feeling of fear, and various

physiological disorders also accompany it. Freud believed that anxiety is a central phenomenon in all conflicts that may affect the individual. Therefore, it is noted that scientists are interested in studying anxiety disorder from various aspects due to its impact on the development of a normal human personality. The importance of anxiety has increased currently as a result of rapid scientific as well as technical developments, their requirements, and the difficulty of being able to predict what the future will be. This leads to an anxiety disorder (Al-Qamsh and Al-Maaytah, 2009).

Anxiety disorder is one of the most common concepts in the field of psychology and mental health. It is considered one of the facts of human existence, a dynamic aspect of personality building, and a variable of human behavior. Although it is an unpleasant experience for the personality, the presence of an appropriate amount of anxiety is necessary for psychological integration. It serves important aspects in the individual's life and alerts to danger before it occurs. Anxiety is common in all psychological and mental disorders and behavioral problems (Beiter et al., 2015).

There have been many definitions that dealt with the anxiety concept. Garai et al. (2009) defined it as: "An unpleasant emotional experience that an individual feels when exposed to a conflict situation, or a frightening stimulus." While Hammad (2016) defined it as: "One of the most important and common psychological disorders among all segments of society, given the complex roles and varied responsibilities of the individual, this leads to fear and anxiety about life in the future."

There are several symptoms of an anxiety disorder comprising physical symptoms such as increased heart rate, dizziness, syncope, numbness, nausea, stomach disorder, chest pain, high level of tension, insomnia, and bad dreams. On the other hand, psychological symptoms include spontaneous panic attacks, depression, high levels of irritability and anger, inability to perceive, forgetting events, and confused thoughts (Othman, 2008).

Psychologists have differed in attributing causes for an individual to having an anxiety

disorder. Some believe that anxiety results from internal factors, which means from within the individual, some believe that they are from external factors, and some see otherwise (Hammad, 2016). The researcher believes that the individual's exposure to various stresses and crises may be the main cause of anxiety disorder. One of the most important crises that the world is going through is the COVID-19 crisis.

The World Health Organization (WHO, 2020) indicated that COVID-19 is a new strain of a virus that has not been previously discovered in humans. It is of animal origin; this means it may spread between animals and humans. The most common symptoms of this virus are fever, dry cough, and feeling tired. Some patients may suffer from aches, pains, and sore throat; others may become infected with only very mild symptoms. Moreover, elderly people and individuals with chronic illnesses are subjected to higher risks of severe virus complications. COVID-19 causes diseases ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome and Severe Acute Respiratory Syndrome.

COVID-19 crisis is a global pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2), which first appeared in China at the end of 2019. It spread within a few months in approximately 200 countries (Papa et al., 2020).

In recent times, the COVID-19 crisis is considered one topic that has received wide attention from researchers, organizations, and governments. The WHO has declared guidelines under the title of mental health and psychological considerations during the virus outbreak. These included guidelines to help the individual face and manage the stresses, maintaining mental health and well-being among different age and social groups, patients and field workers, and providing all the daily updated information through the WHO website (WHO, 2020).

As Covid-19 spread throughout the world, it began to spread in Sudan in mid-March 2020. The Sudanese government confirmed the high spread of the virus, causing large numbers of infections as well as deaths. Khartoum recorded the highest number of infections, while Darfur recorded the

highest number of deaths. This can be ascribed to the limited number of tests and the unwillingness to report or even deny the infection (Altayb et al., 2020).

In light of the pandemic, the situation in Sudan was more complex than in other countries due to the economic crisis that the country is experiencing and the rapid spread of misinformation about Covid-19 posted through social media (Abas et al., 2021).

Sudan is currently suffering from many obstacles as a result of COVID-19 and the subsequent urgent adopted procedures to control its spread, including the nationwide lockdown, dealing with the collapsing health system, and the suspension of tuition fees in schools and universities, which led to the suspension of the educational process. This led to generating reactions to perceived or real threats, which were represented by fear, anxiety, and tension (Omer et al., 2020).

Governments in all countries have imposed a set of preventive procedures to limit the spread of the virus, the most important of which are: preventing movement, the complete lockdown of some areas, and quarantine (Miller, 2020). These procedures have led individuals to excessively buy and stock up on foodstuffs, buy disinfectants and sterilizers in large quantities, perform various procedures and treatments, and other reactions mainly caused by fear and anxiety (Vergin, 2020).

The lockdown procedures resulting from the pandemic have affected the economic and social fields. In addition, such procedures have a significant impact on individuals' psychological, physical health, and well-being. It was noted that these procedures led to generate anxiety and tension among individuals as a result of their constant thinking about how to adapt to the new situation and provide the requirements of their lives (Zhang, 2020).

Hui (2020) pointed out that although the lockdown procedures that were imposed to confront the pandemic are healthy procedures aimed to limit the spread of the virus, they left psychological effects on some individuals. They caused negative psychological symptoms on

individuals such as depression, increased level of anxiety, obsessive-compulsive disorder, and fear that they or family members were infected with the virus.

Many studies have dealt with the psychological effects of the COVID-19 pandemic. Cuiyan et al. (2019) conducted a study in China aimed to reveal the levels of psychological impact, anxiety, and depression during the first stage of the virus outbreak. To achieve the study objectives, the psychological impact scale, anxiety scale, and Beck's list were used. The study sample consisted of 1210 individuals. The study results showed that one-third of the study sample had anxiety symptoms at a moderate level and higher, and 16.5% had symptoms of depression at a moderate level and higher. The results also indicated that there were differences in the levels of psychological impact, anxiety, and depression in favor of females.

Cao et al. (2020) conducted a study in China aimed to reveal the anxiety level among students as a result of the severe psychological stress imposed by the outbreak of the COVID-19 virus. To achieve the study objectives, an anxiety scale was used. The study sample consisted of 143 male and female students from the University. The results of the study showed that 0.9% of the sample members suffer from a very high level of anxiety, 2.7% suffer from a moderate level of anxiety, and 21.3% suffer from a low level of anxiety. The results also indicated that the students who live in rural villages are less anxious than students in big cities.

The study of Bhat et al. (2020) conducted in India aimed to reveal the impact of the lockdown procedures to confront the virus on mental health, economic status, and social life. To achieve the study objectives, an online poll and survey of a group of individuals were conducted. The results of the study showed that 76.6% of the respondents believe that the lockdown is the temporary solution to prevent the spread of the virus, and it can lead to many new problems such as psychological problems 67.5%, social problems 53.5%, economic problems 48.5%, and academic problems if the lockdown continues.

Elmer et al. (2020) conducted a study in

Switzerland aimed to compare students' social networks and their mental health before and during the pandemic lockdown procedures. To achieve the study objectives, change in multiple network dimensions was analyzed, such as interaction, friendship, social support, participation, and mental health indicators, such as anxiety, stress, and loneliness. The study sample consisted of two groups; the first group consisted of 214 students who had experienced and suffered from the pandemic. The second group consisted of 54 male and female students who had not experienced the pandemic. The study results showed that the level of interaction and participation in the study became low, and the levels of stress, anxiety, loneliness, and depression among students got worse compared to what they were before the pandemic. Moreover, fears of losing social life turned into fears regarding health, family, and friends. The results indicated that the mental health level among students was low, and there were differences in the mental health level between males and females in favor of females.

Brooks et al. (2020) conducted a study in the United Kingdom aimed at revealing the psychological effect of quarantine due to COVID-19 on individuals. To achieve the study objectives, 24 reports and articles that dealt with quarantine's psychological effects were reviewed. The results of the study showed negative psychological effects such as anxiety, confusion, anger, and post-traumatic stress. While stress indicators comprised the quarantine period, fears of infection, frustration, boredom, insufficient supplies, insufficient information, financial loss, and stigma.

Tian et al. (2020) conducted a study in China aimed to reveal the psychological symptoms among citizens during the pandemic. To achieve the study objectives, a list of psychological symptoms was used. The study sample consisted of 1060 participants of both genders. The study results showed that the levels of anxiety and depression came with a low degree, and the level of obsessive-compulsive disorder was at a high degree for 70% of the sample members. The results also indicated no differences in psychological symptoms between males and females during the pandemic.

Dovey et al. (2020) conducted a study in Algeria aimed to identify the relationship between social anxiety and psychological and social adjustment among students in the light of the pandemic and quarantine. To achieve the study objectives, the social anxiety scale and the psychosocial adjustment scale were used. The study sample consisted of 60 male and female students from Blida University. The results showed that the level of social anxiety among students was low, and there was a negative correlation between social anxiety and psychological and social adjustment among students.

By reviewing previous studies, it is clear that some of them dealt with anxiety disorder and other disorders such as depression. The study of Cuiyan et al. (2019), Tian et al. (2020), and other studies handled students' anxiety levels. The study of Cao et al. (2020), some of which dealt with the impact of lockdown procedures on mental health, as the study of Bhat et al. (2020), some of which addressed social anxiety and quarantine as the study of Dovey et al. (2020).

By comparing the current study with previous studies, the current study examined the relationship between anxiety disorder and lockdown procedures to confront the virus among the Sudanese. As far as the researcher knows, no previous studies addressed this topic, especially in the Sudanese environment, which enhances conducting this study in light of the scarcity of studies in this field. Moreover, it is expected that this study will occupy an important position among the previous studies. This study can become a starting point for other studies using different samples to help provide them with assistance and supportive social environment and help them achieve their ambitions in the light of the pandemic.

Study Problem

With the emergence of COVID-19, the world has been living in a state of panic and anxiety due to the deaths and infections from this virus. Governments have begun to impose preventive procedures to limit its spread and reduce the number of infections and deaths as much as possible. Therefore, the most important of these

procedures are the complete lockdown of most sectors, curfews, and suspension of learning. These procedures have prevented individuals from practicing their normal lives, restricted mobility, and implied on them to live in a very limited environment, vulnerable to stress, psychological problems, and serious psychological disorders, the most important of which is anxiety disorder.

Hui (2020) indicated that the pandemic and the resulting lockdown procedures and other preventive procedures to confront the spread of the virus were enough to spread the effects and psychological disorders at the individual and social levels. The most important of these disorders is anxiety disorder. In view of the danger of the spread of such disorders in light of the pandemic, the researcher had a desire to reveal the relationship between anxiety disorder and the lockdown procedures to confront the COVID-19 virus among citizens in Sudan. Specifically, the problem of the study lies in answering the following questions:

Is there a statistically significant correlation at the significance level $\alpha \leq .05$ between anxiety disorder and lockdown procedures to confront COVID-19 among the Sudanese?

What is the impact of the lockdown procedures to confront COVID-19 on the Sudanese?

Are there statistically significant differences at the significance level $\alpha \leq .05$ in the level of anxiety and lockdown procedures to confront COVID-19 among the Sudanese according to demographic factors?

Study Objectives

The study sought to achieve the following objectives:

1. Identifying the correlation between anxiety disorder and lockdown procedures to confront COVID-19 among the Sudanese.
2. Revealing the impact of the lockdown procedures to confront COVID-19 among the Sudanese.
3. Identifying the differences in the level of

anxiety and lockdown procedures to confront COVID-19 among Sudanese, according to demographic factors.

Significance of Study

The significance of this study comes within two areas:

Theoretical significance: The significance of the study originates from its two important variables in the lives of individuals at present, which are anxiety disorder and lockdown procedures to confront the pandemic. This initiated additional psychological support to individuals in various fields. This study benefited officials in Sudan (study sample), providing a theoretical framework on the lockdown procedures to confront the virus and its relationship to the anxiety disorder. Moreover, the study will contribute to implementing more research and studies in this field within the study variable and other variables. Therefore, the study provided two scales, the anxiety disorder scale and the closure procedures scale. The significance of the study also comes from the uniqueness and modernity of the topic, which has not received sufficient attention in Arab countries.

Field significance: The results of this study can contribute to aiding the officials and those responsible for limiting the spread of the virus to develop guidance programs and awareness activities that will reduce the spread of anxiety disorder resulting from the lockdown procedures to confront the virus. In addition, producing some awareness publications within this framework and holding online conferences and seminars.

Conceptual and Procedural Definitions

The study included the following terms:

- ◆ Anxiety disorder: a natural element that may affect people at a certain stage of their lives and affect their behaviors and personalities. It leads to feeling certain kinds of fear (Abdelrazek, 2016). It is defined procedurally in this study by the degree that an individual obtains on the anxiety disorder scale which was used in this study.
- ◆ Lockdown procedures: It is one of the plans

used by the majority of countries in the world to confront COVID-19, since the closure of public places, restricting movement outside homes, closing the major transportation routes and crowded places, all of which may negatively affect individuals (Bhat et al., 2020). It is procedurally defined in this study by the degree to which the individual obtains on the scale of lockdown procedures used in this study.

- ◆ COVID-19: It is a viral disease that affects the respiratory system of humans; most patients suffer from mild to severe respiratory diseases and may cause death. The elderly, and those who suffer from basic health problems, such as cardiovascular diseases, diabetes, chronic respiratory diseases, and cancer, are the most affected groups by this virus. It spreads among individuals through socializing and contacting, droplets during sneezing and coughing, and touching and using the tools of those infected with the virus. The most important symptoms are: fever, cough, loss of senses of smell and taste, shortness or difficulty of breath, muscle or body pain, general fatigue, extreme tiredness, and nausea (WHO, 2020).

Study limitations

- ◆ Human and spatial limits: The study population was limited to individuals in the Republic of Sudan, residents and expatriates.
- ◆ Temporal limits: The study was conducted from April to October of the year 2020.
- ◆ Reliability limits: The results of the study were determined by the two tools that were used in the study, the lockdown procedures scale, the anxiety disorder scale, and the psychometric properties of these two tools.
- ◆ Conceptual limits: The results of the study were determined in the light of the concepts and terms used in this study and the terminology contained in different fields.

Materials and Methods

Study Design

The researcher used the descriptive-

correlational approach for its relevance to the study problem and its hypotheses.

The researcher used an electronic questionnaire that was distributed over the internet by groups of friends and relatives through the WhatsApp and Facebook applications due to the inability to distribute the paper questionnaire because of the closure procedures. The study participants received the questionnaire via an electronic link that bears the study's title. An introductory paragraph appears on its interface that clarifies the purpose of the study and invites people to participate. Starting the response is taken as an agreement to participate.

Participants

The study sample consisted of 204 individuals, and the sample included citizens of the Republic of Sudan residing in it and alienation. Data were collected from April to October 2020.

Instruments

The study participants completed three online surveys. The first part deals with personal data such as age, alienation status, income level, and field of work, see Table. 1.

Table. 1
The general data of the sample members

Variables		N	%
Gender	male	88	43.13%
	female	116	56.86%
Age	15 to 19	9	4.41%
	20 to 29	40	19.60%
	30 to 39	76	37.25%
	40 to 49	44	21.56%
	50 and more	35	17.15%
Alienation from the homeland	Alienation	90	44.11%
	Non alienation	114	55.88%
Economic situation	Low income	52	25.49%
	Middle income	108	52.94%
	High income	44	21.56%

Variables	N	%
Unemployed	64	31.37%
Medical	24	11.76%
Educational	40	9.80%
Functional field		
Media	12	0.98%
administrative jobs	24	11.76%
service jobs	16	2.88%
Student	24	11.76%

As for the second questionnaire, it deals with the lockdown measures to confront Covid 19. The questionnaire included 9 measures that were implemented in the countries under study during the lockdown period. Namely, study commentary, curfew, home stone, quarantine in health institutions, media coverage, publications on social media, hanging prayers in mosques, suspension of visiting the Two Holy Mosques, and travel ban.

The third questionnaire dealt with an anxiety disorder scale extracted from the List of Neurotic Symptoms screen scale (LNSS) prepared by Halima Adam. The scale consists of 8 phrases that are answered on the Likert five-point scale (never, rarely, sometimes, always).

The score obtained is interpreted according to a scale that includes normal, mild, moderate, and severe. The survey list has an internal consistency validity of .99 and a reliability of .98 at the .05 significance level.

Statistical Analysis

Parametric tests were used for analysis and descriptive statistics such as frequencies, means, and standard deviation. Correlations between variables were tested using the Pearson Correlation Test coefficient. Intergroup comparisons were made using a one-way analysis of variance (ANOVA) to compare categorical variables. To discover the predictive value of various variables, the linear regression was used.

Cronbach’s Alpha, Guttman and Spearman-Brown laboratories were used to validate the instrumentation study, and all calculations were

performed with SPSS for Statistical Package for Social Sciences, version 24.

Results

- First Question: **Is there a statistically significant correlation at the significance level $\alpha \leq .05$ between anxiety disorder and lockdown procedures to confront COVID-19 among the Sudanese?**

To identify the relationship between anxiety and lockdown procedures, the researcher used the Pearson Correlation test and found that the relationship was positively correlated: $r(203) = .412, P = .000 < .01$, as shown in Table 2.

Table 2

The relationship between anxiety disorder and lockdown procedures

R	df	R Square	Adjusted R Square	Std. Error of the Estimate
.412	203	.170	.165	6.488

Simple linear regression was used to assess whether lockdown procedures significantly predicted developing an anxiety disorder. The results of the regression suggested that procedures explained 17% of the variance, $R^2 = .170, F(1,202) = 41.241, p < .001$. Lockdown procedures significantly predicted developing anxiety disorder: $\beta = .257, t = 6.422, p < .001$. See Table 3.

Table 3

The regression coefficient for anxiety disorder and lockdown procedures

Model	df	Mean Square	R Square	F	Sig
Regression	1	1736.27	.170	41.241	.000
Residual	202	42.101			

- Second Question: **What is the impact of the lockdown procedures to confront COVID-19 on the Sudanese?**

Table 4 shows the differences in the effect of lockdown procedures on the Sudanese study sample. The most influential procedures were suspending visits to the Two Holy Mosques $M = 4.862, SD = 1.588$, a travel ban $M = 4.823, SD = 1.533$, and banning prayers meetings in mosques $M = 4.764, SD = 1.656$, and media coverage $M = 4.294, SD = 1.7565$.

Table 4

Effect of lockdown procedures on the sample members.

Precautionary measures	N	Mean	Std. Deviation
Study Commentary	204	3.8627	2.00511
Curfew	204	3.9412	1.82389
Home stone	204	4.0000	1.78665
Quarantine in health institutions	204	3.4706	2.10421
media coverage	204	4.2941	1.75655
Publications on social media	204	4.0000	1.90410
Hanging prayers in mosques	204	4.7647	1.65602
Suspending visits to the Two Holy Mosques	204	4.8627	1.58838
Travel ban	204	4.8235	1.53393

- Third Question: **Are there statistically significant differences at the significance level $\alpha \leq 0.05$ in the level of anxiety and lockdown procedures to confront COVID-19 among the Sudanese according to demographic factors?**

To identify the differences in anxiety according to the variables of alienation from the homeland and income and the interaction between them, the Univariate Analysis of Variance UNIANOVA was used. The results showed no significant differences in the variable of alienation from the homeland, $F_{1, 1} = 1.856, p = n.s.$, and the income variable, $F_{1, 2} = 3.166, p = .044$.

As for the interaction between the two variables of alienation from the homeland and income, there were significant differences in the anxiety that appeared among the sample members, $F_{2} = 412.9, p = 000 < .050$, see Table 5.

Table 5

Differences in anxiety according to alienation from the homeland and income

Variables	Mean Square	F	Sig.
Alienation	87.457	1.856	.175
Income	149.140	3.166	.044
Alienation * Income	412.909	8.765	.000

Figure 1 shows the results of the interaction between alienation from the homeland and income. The most anxious groups were non-

alienation with high incomes, $M = 21.666, SD = 9.432$ and alienation with middle income, $M = 16.800, SD = 7.275$.

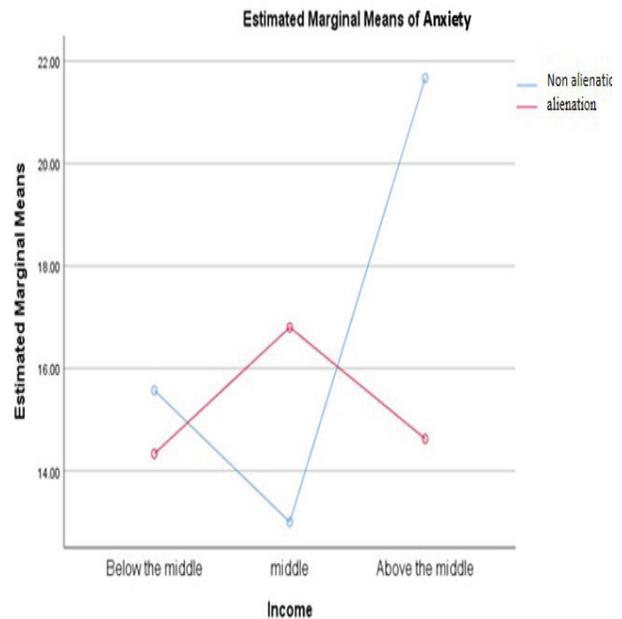


Figure 1

showed the differences in anxiety resulting from the interaction between alienation and income

Table 6 showed significant differences in anxiety according to gender and function variables. The variance according to the gender, $F_{1,1} = 7.343, P = .007$, and variance according to the function, $F_{1,5} = 3.443, P = .003$. There were significant differences in anxiety among the study sample: $F_4 = 6.379, p = 000 < .050$ according to the interaction between gender and function.

Table 6

Differences in anxiety according to gender and function

Variables	Mean Square	F	Sig.
Gender	311.263	7.343	.007
Function	145.944	3.443	.003
Gender * Function	270.383	6.379	.000

Figure 2 showed the most anxious groups, women working in the administrative sector, $M = 23.500, SD = .5345$, and men working in the health sector, $M = 20.000, SD = .000$.

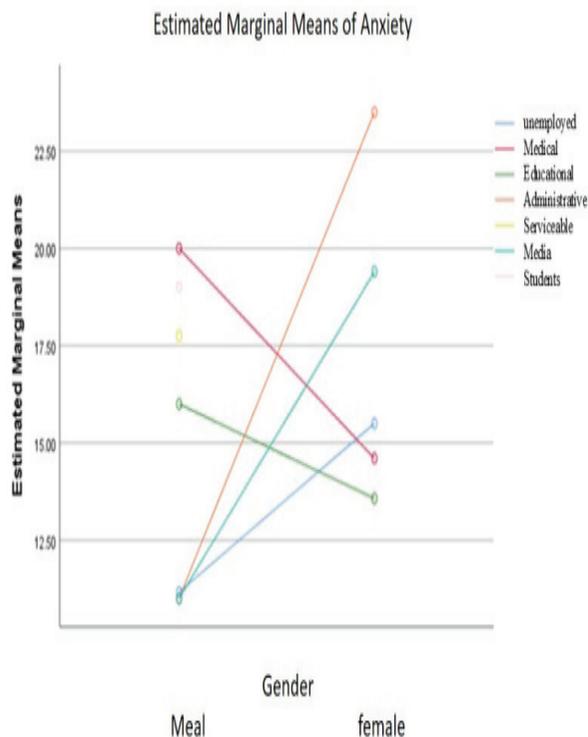


Figure 2:

Differences in anxiety resulting from the interaction between gender and function

The Univariate Analysis of Variance UNIANOVA was used to identify the effect of lockdown procedures on the study sample according to the gender and age variables. The variance according to the gender, $F_{1,1} = 54.439$, $p = .000$, and variance according to the age, $F_{1,4} = 11.627$, $P = .000$. There were significant differences in the interaction between them, $F_{3} = 3.300$, $p < .050$. Table 7 illustrated this result.

Table 7

Differences in the effect of lockdown procedures according to gender and age

Variables	Mean Square	F	Sig.
Gender	311.263	7.343	.007
Function	145.944	3.443	.003
Gender * Function	270.383	6.379	.000

The most affected groups by the lockdown procedures were women aged 50 and over, $M = 53.000$, $SD = 1.069$ then women aged 40 to 49, $M = 48.375$, $SD = 7.786$ then men aged 40 to 49, $M = 39.666$, $SD = 2.146$. See Figure 3.

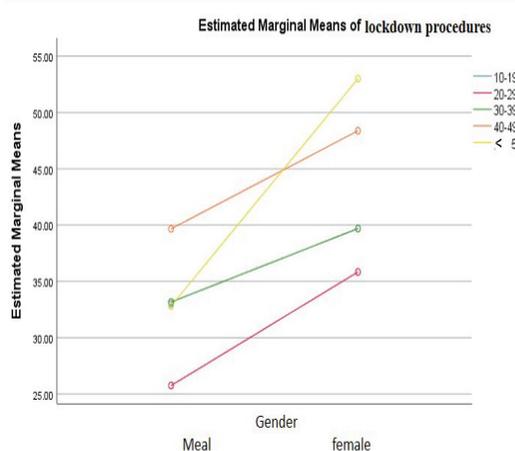


Figure 3:

Differences in the effect of lockdown procedures according to gender and age

Discussion

- **First: Discussing the results of the first question.**

The results showed a positive correlation between anxiety disorder and lockdown procedures to confront COVID-19 among the Sudanese.

This result could be ascribed to the news posted by the media and social networking sites. Some of them transformed the matter from a health issue into a political and ideological one. Moreover, they denied and underestimated the seriousness of the COVID-19 pandemic and the lockdown procedures, and linked different events to each other. This caused anxiety among people. The National Center for Mental Health Promotion (2020) confirmed that rumors posted through social media about COVID-19 might have negative impacts on the individuals' mental health, such as generating psychological disorders including anxiety and depression.

This result could be ascribed to the fact that the COVID-19 pandemic came suddenly and spread quickly. Moreover, individuals found themselves facing a mysterious global phenomenon spreading very quickly, threatening everyone, and could not be controlled individually or collectively except through lockdown procedures. These procedures caused stress, psychological and social problems and made individuals vulnerable to anxiety disorder (Kluger, 2020).

The researcher believes that the lockdown procedures caused many psychological problems and stress in Sudan. It is a poor developing country, economically and socially, and suffers from the scourge of war, poverty, and destitution. In light of the lack of economic, social support opportunities, psychological assistance, specialists, and adequate health and human services infrastructure, the population in Sudan suffers from lockdown, fear, and anxiety.

Moreover, this result could be explained in the light of direct risks that some individuals might be exposed to because they could not purchase sterilizers and disinfectants or follow the Public Health instructions regarding the quarantine. In addition, they overestimated the potential risks of infection, which caused anxiety. Hussein and Hussein (2006) indicated that overestimating the potential risks caused constant doubts about their abilities to confront and resist the virus, which caused constant anxiety and generated automatic negative thoughts of predicted permanent risks and distorted information.

This result could also be ascribed to the fact that the lockdown procedures were the main reason for forcing individuals to abide by many restrictions such as staying home. This caused the inability to do tasks comfortably, keep cleanliness and sterilization continuously, and increase caution in dealing with others. These procedures caused feelings of restriction and lack of freedom, which led to mental health consequences and made people vulnerable to anxiety disorders, boredom, and frustration. Ukri (2020) indicated that a person by nature could not tolerate such restrictions, especially with no specific end date and which caused a serious health situation. Hence, these restrictions put individuals under great psychological pressure, which might develop anxiety.

- **Second: The results of the second question.**

The results showed differences in the impact of lockdown procedures among the Sudanese. The most effective procedures were suspending visits to the Two Holy Mosques, preventing travel, and suspending prayers in mosques.

These results could be ascribed to the fact

that suspending visits to the Two Holy Mosques - as one of the procedures to face the COVID-19 pandemic - had a negative impact on the country. This is because the Republic of Sudan is an Arab Islamic country, and most of its residents are Muslims, following Islamic customs and traditions. Therefore, visiting the Two Holy Mosques to perform worship was very important to them and the Islamic world. Moreover, visiting the Two Holy Mosques by foreigners and those coming from outside Saudi Arabia to perform Umra or Hajj was very important for Muslims. In light of the spread of COVID-19, Saudi Arabia and other Arab countries closed their borders preventing travel, thus suspending visits to the Two Holy Mosques. These procedures had negative impacts on the Sudanese, as they could not perform the rituals of Umra or Hajj.

The researcher believes that preventing travel is one of the most procedures with negative impacts on people in Sudan since it prevents many people abroad from returning and foreign students and workers from traveling to their country. Moreover, the COVID-19 pandemic made individuals feel anxious, stressed, afraid of being infected, and unable to meet their families again. Des Vos (2020) indicated that the lockdown and social distancing procedures would negatively impact travel, outside activities, and incur changes in public transportation rules.

Furthermore, suspending prayers in mosques affected people in Sudan greatly because it was very difficult for them to adapt to the idea of closing mosques since they were used to praying there constantly.

The researcher believes that suspending prayers in mosques has a negative impact on people in Sudan, which is one of the Arab Islamic countries that keep mosques open for people to perform prayers. Moreover, the Sudanese are mostly Muslims who perform their prayers and worship in mosques.

Third: The results of the third question.

The results showed no differences in anxiety disorder according to the expatriation variable.

Moreover, in light of the spread of COVID-19 worldwide and its negative impact on the physical, psychological, social, and economic fields, this caused the individuals to be exposed to stress, many psychological disorders, especially anxiety, the main factor worldwide. Therefore, countries worldwide sought to develop preventive plans and procedures to limit the spread of COVID-19 and its consequences.

This result could be explained by the fact that health sector workers faced great risks and were exposed to COVID-19 infection. Many workers worked in health care places that did not abide by the required level of preventative procedures and infection control. Thus, making them feel anxious due to their exposure to infection.

The study of Mahqoub et al. (2021) confirmed that healthcare professionals and frontline health workers who participated in the diagnosis, treatment, and direct care of COVID-9 patients were more likely to develop symptoms of stress, anxiety, and depression. This happened due to the weak healthcare system in Sudan, which limited the functions of the medical staff, in addition to the poor infrastructure.

Zhang (2020) indicated that there were several factors associated with the development of anxiety disorder due to COVID-19. The most important ones were gender, job, income, standard of living, and lack of communication with others due to social distancing.

The results showed differences in the effect of lockdown procedures on the study sample due to the variables of gender and age, and the interaction between them, in favor of women aged 50 and above, then women aged 40-49.

This could be ascribed to women at this age facing health risks, lack of job opportunities, financial support, food insecurity, and high incidences due to stigma and discrimination.

This result could also be explained that most healthcare professionals are women, especially nurses, midwives, and support staff. The imposed lockdown procedures caused difficulty in accessing appropriate health services and sanitation facilities to offer help for people with chronic diseases and symptoms of menopause.

Moreover, the results showed differences in the impacts of the lockdown procedures on men aged 40-49. This could be ascribed to the concerns that the lockdown procedures caused increased poverty and unemployment, loss of work, work from home, low level of income, radical change in the daily routine, prevention of public occasions, and staying at home. These procedures affected men greatly because they could not go outside without restricting their freedom and movement.

The researcher believed that the impact of lockdown procedures on men aged 40-49 was due to the nature of their work which required spending most of their time outside the house. Moreover, they used to engage in social occasions and events all the time. Therefore, the lockdown procedures made them feel frustrated and afraid of not being able to lead normal lives such as going out and meeting friends and relatives.

Moreover, Abas et al. (2021) confirmed this result in a study, which indicated that the highest rate of infections and deaths in Sudan was for men aged 45 and above.

Recommendations

Based on the findings, the researcher recommends the following:

1. Raising the society segments' awareness on the negative impacts of lockdown procedures and ways of reducing them by the Ministry of Health, Ministry of Culture and Media, and other relevant authorities.
2. Holding specialized courses on reducing anxiety disorder by associations specialized in mental health.
3. Strengthening and intensifying media programs that include entertainment and educational means to help people adapt to the lockdown and quarantine procedures.
4. Establishing psychological, educational, and social counseling centers to help individuals overcome difficulties and problems caused by the lockdown procedures.

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