Al-Rafidain J Med Sci. 2024;7(1):173-180.
DOI: https://doi.org/10.54133/ajms.v7i1.646

A J M S
Online ISSN (2789-3219)

Research Article

Relationship between Depression, Anxiety, and Stress with Contacting COVID-19, Information About COVID-19, and the COVID-19 Vaccine in Jordan

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Received: 6 February 2024; Revised: 10 July 2024; Accepted: 18 August 2024

Abstract

Background: The COVID-19 pandemic resulted in a global mental health burden, particularly due to the fear of contacting individuals with COVID, misinformation about the pandemic, and vaccine hesitancy. ***Objective***: To evaluate depression, anxiety, and stress levels among Jordanians during the COVID-19 pandemic, as well as to investigate differences in depression, anxiety, and stress over contact, information, and the COVID-19 vaccine during the pandemic. ***Methods***: A cross-sectional design was implemented. In order to enroll 624 participants, purposive snowball sampling was implemented. Data was collected using Arabic versions of the Depression, Anxiety, and Stress Scales. ***Results***: The mean scores for anxiety, depression, and tension were 12.26, 13.49, and 13.49, respectively. Nearly 52% of participants reported having intimate contact with a confined COVID-19 vaccine, while the majority reported knowing someone who had COVID-19. Depression, anxiety, and tension levels were significantly different in relation to the interaction with COVID-19, information about COVID-19, and COVID-19 vaccines. ***Conclusions***: The COVID-19 pandemic was associated with an elevated incidence of anxiety and depression. COVID-19 stressors have a direct impact on public mental health, necessitating that governments and health systems adapt, innovate, and evolve in the future. This objective may be accomplished through the utilization of technology and the media. Nevertheless, the most effective method of preventing more severe effects on the public's mental health at this time is to prepare the public for potential future surges of the epidemic.

Keywords: Anxiety, COVID-19 information, Depression, Stress, Vaccine.

العلاقة بين الاكتئاب والقلق والتوتر مع الاتصال بـCOVID-19 ، ومعلومات حولCOVID-19 ، ولقاح COVID-19 في الأردن

الخلاصة

الخلفية: تسببت جائحة كوفيد-19 بعبء عالمي على الصحة النفسية، لا سيما بسبب الخوف من الاتصال بالأفراد المصابين بكوفيد، والمعلومات الخاطئة حول الجائحة، والتردد في تلقي اللقاح. **الهدف**: تقييم مستويات الاكتئاب والقلق والتوتر لدى سكان الأردن خلال الجائحة، وكذلك الاختلافات في المستويات فيما يتعلق بالاتصال مع المصابين، والمعلومات عن المرض، والمطاعيم خلال الجائحة. **الأساليب**: تم تنفيذ تصميم مقطعي. من أجل تسجيل 624 مشاركا ، تم تنفيذ أخذ عينات كرة الثلج الهادفة. تم جمع البيانات باستخدام النسخ العربية من مقاييس الاكتئاب والقلق والتوتر. **النتائج**: كان متوسط درجات القلق والاكتئاب والتوتر 12.26 و 13.49 و 13.49 على التوالي. أبلغ ما يقرب من 52٪ من المشاركين عن وجود اتصال حميم بلقاح COVID-19 المحصور، بينما أفاد الغالبية أنهم يعرفون شخصا مصابا ب COVID-19.كانت مستويات الاكتئاب والقلق والتوتر مختلفة بشكل كبير فيما يتعلق بالتفاعل مع COVID-19، والمعلومات حول COVID-19 ، ولقاحات COVID-19. **الاستنتاجات**: ارتبطت جائحة COVID-19 بارتفاع معدل الإصابة بالقلق والاكتئاب. تؤثر ضغوط COVID-19 بشكل مباشر على الصحة العقلية العامة، مما يستلزم أن تتكيف الحكومات والأنظمة الصحية وتبتكر وتتطور في المستقبل. ويمكن تحقيق هذا الهدف من خلال استخدام التكنولوجيا ووسائط الإعلام. ومع ذلك ، فإن الطريقة الأكثر فعالية لمنع الآثار الأكثر حدة على الصحة العقلية للمجتمع في هذا الوقت هي إعدادهم للأوبئة المستقبلية المحتملة.

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Article citation: Shaheen A, Hamdan K, Allari R, Albqoor MA, Aljalamdeh R, Alrimawi I. Relationship between Depression, Anxiety, and Stress with Contacting COVID-19, Information About COVID-19, and the COVID-19 Vaccine in Jordan. *Al-Rafidain J Med Sci*. 2024;7(1):173-180. doi: https://doi.org/10.54133/ajms.v7i1.646

INTRODUCTION

The disease is caused by the SARS-CoV-2 coronavirus. COVID-19. Following a report of a cluster of reported viral pneumonia cases in Wuhan, People's Republic of China, WHO initially learned about this new virus on December 31, 2019 [1]. The indications of COVID-19 may differ. Some people experience no symptoms,

while others develop a fever, a chronic cough, or an alteration in their sense of taste or smell. Other symptoms include a headache, sore throat, and runny nose [2]. Since then, the virus has expanded globally, wreaking havoc on countries in Asia, the Middle East, Europe, the United States, the United Kingdom, and North Africa. The coronavirus caused 693,569,428 cases, 6,907,676 deaths, and 665,363,033 recoveries [3]. Jordan's data include 1,746,997 total cases to 2023, 14,122 deaths, 1,731,007 total recovered cases, and 1,868 active cases [3]. As prior health crises have proved, the current epidemic will undoubtedly have an impact on mental health, and the world was unable to deal with an epidemic of this magnitude when the global pandemic occurred [4]. PTSD, depression, anxiety, and the worsening of pre-existing psychiatric diseases are only a few of the long-term consequences of COVID-19, in addition to the relatively high fatality rate [4,5]. Numerous studies have found a link between COVID-19-related stressors and anxiety, safety actions (such as using personal protective equipment), disease avoidance, and obsessive monitoring and reassurance-seeking [6]. Taylor *et al*. discovered a relationship between concern over COVID-19's socioeconomic repercussions and previously unknown phenomena connected to health anxiety. Furthermore, the study correlated higher vaccination acceptance to COVID-19-related anxiety and health-related worries, whereas the fear of social and economic effects exhibited the opposite relationship. [7]. Traunmüller *et al*. (2020) investigated the psychological anguish that Austrians experienced in the early stages of the COVID-19 outbreak. The target population consists of all Austrians above the age of sixteen. They used the Depression, Anxiety, and Stress Scale (DASS-21) and the Impact of Event Scale-Revised (IESR) to evaluate mental health. The study included 4126 participants. The study found that 43.3% of participants rated the psychological impact as moderate, while 37.7% ranked it as severe. Furthermore, depression spans from moderate (26.5%) to severe (13.3%), anxiety from 20.3% to severe (11.4%), and stress from 21.2% to severe (10.7%). [8]. Downplaying the severity of the issue, being female, being older, having lower levels of education, concern for family members, using the internet as the primary source of information, being able to conduct business from home, having regular (indirect) interaction with family or friends, the fact that information about the infection is readily available, faith in the ability to diagnose, and people's physical activity all had a greater psychological impact. Alkhamees *et al*. (2020) conducted a regional survey of Saudi Arabia's general population to investigate the psychological effects of the pandemic. The results showed that 28.3%, 24%, and 22.3% of participants had moderate to severe depression, anxiety, and stress symptoms [9]. Wang *et al*. (2020) identified both confirmed and suspected contacts in COVID-19 cases. Overall, 1% of participants reported they had come into contact with someone who had COVID-19 or contaminated materials; 0.5% said they had come into indirect contact with someone who had the disease; and 0.3% had come into intimate touch with someone who had the disease [10]. The same study found that providing up-to-date and accurate health information, as well as specific preventative behaviors such as immunization, lowered the epidemic's psychological consequences and lower levels of stress, fear, and melancholy [11]. Furthermore, Wang *et al*. (2021) discovered a strong correlation between decreased anxiety, melancholy, and stress in the general public with COVID-19 information, including travel advice, local transmission data, treatment, and vaccination information [10]. Okan *et al*. (2020) define the "infodemic" associated with the COVID-19 outbreak as an abundance of both true and false information [12]. Health literacy is described as the ability to gather, analyze, evaluate, and apply health information, which is essential for navigating the coronavirus and COVID-19 information environments. Despite having a high general level of health literacy, several study participants struggle to understand COVID-19 material [12]. The participants felt well-informed on the coronavirus. However, 47.8% said they weren't sure whether to believe COVID-19 news stories. People with lesser levels of health literacy were substantially more confused about coronavirus information. The study discovered that focused public information campaigns and health literacy education for entire communities are necessary to assist people in navigating information during the infodemic, identifying lies, and making decisions based on correct and reliable information [12]. According to literature reviews, COVID-19 vaccination intentions differed significantly between nations [13]. The term "vaccine hesitancy" refers to persons who are concerned about receiving vaccines [14]. "Vaccine resistance" refers to a person's refusal to receive an inoculation. The Umakanthan *et al*. (2021) study suggests aggressively contacting vaccine-hesitant respondents with positive information about COVID-19 immunization and public health in order to turn them into vaccine-decisive people [14]. To avoid public misinformation, the government and healthcare businesses should employ propaganda and methods for detecting vaccine-resistant persons [14]. The Jordanian government is leading the fight against COVID-19 through the National Center for Security and Crisis Management (NCSCM), which has a highly qualified multidisciplinary staff [15]. Government officials diligently and consistently inform the public about decisions affecting various aspects of life. Teams of epidemiological surveillance professionals are also sent across the country to handle outbreaks and conduct random virus testing and surveillance [15]. The Ministry of Health and the Ministry of Digital Economy and Entrepreneurship worked together to build an Arabic-language COVID-

19 website with the purpose of educating and spreading information [16]. The Jordanian government and Facebook collaborated to educate Jordanians who use Facebook, one of the country's most prominent social networking sites, about COVID-19[16]. Jordan conducted a variety of studies on COVID-19, including its impact, information transfer, knowledge and awareness, and immunization rates across general and specialized populations [17–19]. However, to the best of the researchers' knowledge, no published studies have investigated the general population's depression, anxiety, and stress responses to developing coronavirus infections in Jordan, as well as the association between their knowledge of COVID-19 and vaccination. To address this issue, Jordan's first thorough statewide study of psychological correlates such as depression, anxiety, and stress was conducted during the COVID-19 outbreak. The findings could shed light on the population's psychological needs and pave the way for specialized mental health therapies to assist people in this unusual situation. The purpose of this study is to evaluate the levels of depression, anxiety, and stress in the Jordanian population during the COVID-19 pandemic, and to investigate the disparities in depression, anxiety, and stress regarding contact, information, and the COVID-19 vaccine during the pandemic.

Methods

Study design, setting and sampling

A cross-sectional design was used in this study. The study was conducted in Jordan in February 2021. The inclusion criteria were Jordanian citizens aged 18 years or older who could read and understand Arabic and were willing to participate in the study. The sample size was calculated using a 95% confidence level, a four-confidence interval, and a population above 18 years of age = 6.92 million [20]. The resulting estimated sample size was 600. The sampling techniques of networking and snowballing were used to reach the study participants. Different social media sites were used to distribute the link to the questionnaire.

Ethical consideration

This research was reviewed by the Institutional Review Board at the University of Jordan (No 4/1/2016) and Al-Ahliyya Amman University. Because the researchers collected the data through an electronic, self-administered questionnaire, they did not obtain permission from institutions or facilities. The protocol for the research project conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Edinburgh 2000). For this study, the researchers obtained permission from the questionnaire authors. The researchers ensured the participants' anonymity throughout the study, ensuring their voluntary participation.

Data collection

Data collection took place in February 2021. A web-based (online) self-administered questionnaire was used to collect the data. Google Forms was used to structure the questionnaire (https://drive.google.com). A cover letter was used to explain the purpose of the study and what was required of the participant. Participants were provided with a link to access and complete the questionnaire and were instructed that the questionnaire takes 15-20 minutes to complete. Submitted questionnaires were saved to the researcher's private Google Drive.

Outcome measurements

Include information about age, sex, academic level, employment status, monthly income, marital status, health insurance, and chronic diseases. Degree of contact with COVID-19, information about COVID-19, and the COVID-19 vaccine were measured using the tools developed by Rodríguez-Rey *et al*. (2020) who built their questionnaire on WHO (2020) as the following [21]:

Having COVID-19 Disease Contact: Participants indicated whether they were aware of an individual who had been diagnosed with a coronavirus infection, had been in close contact with an individual who had symptoms consistent with the virus within the past 14 days, had symptoms consistent with the virus themselves, had received a negative or positive result from a coronavirus test, or had none of the aforementioned.

Information about the COVID-19 Pandemic: Participants listed the primary information sources they had used to learn about the COVID-19 issue, how much more knowledge they needed, and how many hours they had spent over the preceding 24 hours viewing or reading about the coronavirus epidemic.

COVID-19 vaccination information: The 12-item Vaccination Attitudes Examination (VAX) Scale was implemented to evaluate individuals' generalized adverse attitudes toward vaccinations [22]. Participants were advised to consider vaccinations in general rather than the COVID-19 vaccine in particular. The responses on a six-point scale ranged from 1 for "strongly agree" to 6 for "strongly disagree." Four previously derived subscales were calculated: (1) suspicion of vaccination benefit, (2) anxieties about unanticipated long-term consequences, (3) concerns about economic exploitation, and (4) preference for innate immunity [22]. All four subscales exhibited satisfactory internal reliability and validity (Cronbach's alphas = 0.77–0.93). One question, "Will you take the vaccine when it becomes available?" was employed to assess uncertainty and resistance to receiving the COVID-19 vaccine

immediately upon its availability [23]. The possible responses were "1-unlikely" to "3-yes, likely."

Depression, Anxiety, and Stress: They were assessed with the Arabic version of the Depression, Anxiety, and Stress Scales (DASS) [24]. The 42-item DASS-42 is a self-report tool created by Lovibond and Lovibond (1995) [25]. It is a self-report questionnaire that distinguishes between three related and clinically relevant negative emotional states: depression, anxiety, and stress. It offers a quantitative (dimensional) assessment of the severity of each syndrome. Previous research has shown that the Arabic version of the DASS has strong psychometric qualities [24, 25]. The DASS questionnaire has 42 items, with 14 each for the depression, anxiety, and stress subscales. The questions are graded on a four-point Likert scale (0 = did not apply to me at all, 1 = applied to me to some degree or some of the time, 2 = applied to me to a significant degree or a substantial part of the time, and 3 = applied to me very much or most of the time). Each subscale score might range between 0 and 40. The depression subscale score can be interpreted as follows: The scale from 0 to 9 indicates no depression, 10-13 indicates mild depression, 14-20 shows moderate depression, 21-27 indicates severe depression, and > 28 indicates extremely severe depression. Anxiety subscale scores are interpreted as follows: 0-7 shows no anxiety, 8-9 suggests mild anxiety, 10-14 indicates moderate anxiety, 15-19 indicates severe anxiety, and ≥20 indicates extremely severe anxiety. The stress subscale score can be interpreted as follows: 0-14 implies no stress, 15-18 suggests mild stress, 19-25 shows moderate stress, 26-33 indicates severe stress, and > 34 indicates extreme stress.

Data analysis

The data were analyzed using SPSS version 23 [26]. Demographic characteristics were described using descriptive statistics such as frequencies and percentages. The age, depression, anxiety, and stress subscales were described using mean values, standard deviations, and percentiles. In addition to the degree of contact with COVID-19, knowledge about COVID-19, and the COVID-19 vaccine, differences and associations were tested using the t-test and one-way ANOVA. The findings were statistically significant at $p<0.05$.

RESULTS

The study has 642 participants. The sample was youthful, with an average age of 30.4±11.23 years. The majority of participants were female (66.8%), had a university degree (72.6%), were unemployed (39.4%), and were single (55.3%). Table 1 provides additional demographic information about the sample. The average score for depression, anxiety, and stress in this sample was 12.26±10.53, 9.04±9.34, and 13.49±10.72, respectively. The prevalence of severe and extremely severe depression was alarming (19.5% of the sample).

Table 1: Sample Characteristics (n=624)

Character	Value
Age (year)	30.37±11.23
Sex	
Male	207(33.2)
Female	417(66.8)
Marital status	
Married	258(41.3)
Single	345(55.3)
Divorced/widowed/separated	21(3.4)
Level of education	
< high school	35(5.6)
High school	38(6.1)
University education	453(72.6)
> University education	98(15.7)
Type of employment	
Unemployed	246(39.4)
Self-employed	33(5.3)
Industry	12(1.9)
Commercials	17(2.7)
Agriculture	6(1)
Healthcare	170(27.2)
Institutions	42(6.7)
Education	74(11.9)
Services/construction/marketing	24(3.8)
Family monthly income	
< 352 JD	112(17.9)
352 < and < 825 JD	286(45.8)
> 825 JD	226(36.2)
Health insurance (Yes)	472(75.3)
Chronic diseases (Yes)	97(15.5)

Values were expressed as mean±SD, frequencies, and percentages.

Levels of severe and extremely severe anxiety were also high (22.2%), while severe and extremely severe stress levels were 15.9% (Table 2). The majority of subjects reported knowing someone who had COVID-19, and nearly 52% had close contact with a contained COVID-19 vaccination.

Table 2: Levels of Depression, Anxiety, and Stress in a Jordanian Sample during COVID-19 (n=624)

DAAS subcategories	Results
Depression	12.26±10.53
Depression levels	
No evidence of depression	298(47.8)
Mild depression	93(14.9)
Moderate depression	111(17.8)
Severe depression	55(8.8)
Extremely severe depression	67(10.7)
Anxiety	9.04±9.34
Anxiety levels	
No evidence of anxiety	356(57.1)
Mild anxiety	44(7.1)
Moderate anxiety	85(13.6)
Severe anxiety	47(7.5)
Extremely severe anxiety	92(14.7)
Stress	13.49±10.72
Stress levels	
No evidence of stress	388(62.2)
Mild stress	58(9.3)
Moderate stress	79(12.7)
Severe stress	55(8.8)
Extremely severe stress	44(7.1)

Values were expressed as mean±SD, frequencies, and percentages.

A significant proportion of participants (57.2%) contacted a suspected case. However, just 17.8% reported symptoms but did not test. The proportion of positive cases was 22.1%, with only 6.5% showing little or no willingness to take precautions, such as wearing a mask when outside (Table 3).

Table 3: The Degree of Contact with COVID-19 Disease, Information about COVID-19 Pandemic, and COVID-19 Vaccine in Jordan (n=624)

The degree of contact with the COVID-19 disease	**n(%)**
Know someone with COVID-19	
Yes	532(85.3)
No	61(9.8)
Not sure	31(5)
Close contact with a confirmed case of COVID-19	
Yes	325(52.1)
No	231(37)
Not sure	68(10.9)
Close contact with someone with COVID-19 symptoms or (suspected)	
Yes	357(57.2)
No	191(30.6)
Not sure	76(12.2)
Had COVID-19 symptoms and did not test	
Yes	111(17.8)
No	510(81.7)
Not sure	3(0.5)
Tested positive with COVID-19	
Yes	138(22.1)
No	480(76.9)
Degree of commitment to take precautions (wearing the mask when being outside)	
No commitment at all	4(0.6)
Little commitment	37(5.9)
Committed to some extinct	119(19.1)
Rather much committed	163(26.1)
Always committed	299(47.9)
Information about the COVID-19	**n(%)**
The main source of information	
No specific source	63(10.1)
Family, friends, or coworkers	20(3.2)
Official sources (TV, radio, Written press (digital/ paper)	124(19.9)
Social media	90(14.4)
Scientific articles	39(6.3)
Combination of more than one sources	288(46.1)
The need for more information	
Yes	277(44.4)
No	347(55.6)
Satisfaction with Information	
Very dissatisfied	88(14.1)
Dissatisfied	129(23.9)
Neutral	0(0)
Satisfied	304(55.1)
Very satisfied	43(6.9)
COVID-19 vaccine	**n(%)**
Did you register to take COVID vaccine?	
Yes	165(26.4)
No	450(72.1)
Will you take the vaccine when it becomes available?	
Yes	209(33.5)
No	208(33.3)
Not sure	198(31.7)
If you were not willing to take the vaccine, that is because	
Due to pregnancy, lactation, or planning for pregnancy	27(4.3)
Not trusting the effectiveness of the vaccine	62(9.9)
Fear of unexpected side effects	111(17.8)
Having a severe allergic reaction	17(2.6)
Preference for natural immunity	81(13)
Fears related to commercial profit of manufacturing companies	10(1.6)
Combination of more than one reason	307(50.8)
Do you have sufficient information about the vaccine?	
Yes	192(30.8)
No	284(45.5)
Not sure	139(22.3)
Do you think that there are differences between COVID vaccines according to manufacturing companies?	
Yes	391(62.7)
No	51(8.2)
Not sure	173(27.7)

The most frequent sources of information concerning the COVID-19 epidemic were official sources, such as television, radio, and the written press. More than half of the sample (55.6%) reported no need for further information about the pandemic, and 62% were satisfied or very satisfied with the information they already had.

A high percentage of the sample (72.1%) reported not registering to take the COVID-19 vaccination, with the most common reasons being fear of unanticipated adverse effects and a preference for natural immunity. ANOVA analysis revealed significant differences in depression scores based on contacting a confirmed case (p=0.004), contacting a suspected case (p=0.025), having symptoms but not testing (p<0.001), commitment to taking precautions (p=0.011), satisfaction with pandemic information (p<0.001), and vaccine knowledge (p=0.001). Table 4 shows the post-hoc significant differences (within groups) from these comparisons using the Tukey threshold for significance.

Table 4: Post-hoc Significance Differences in Depression, Anxiety, and Stress (n=624)

Comparison groups	Depression	*p*	Anxiety	*p*	Stress	*p*
Knowing someone infected with COVID-19	–	–	Yes 9.2±9.3 No 5.9±6.9	0.024	–	–
			Not sure 12.9±12.6 No 5.9±6.9	0.002		
Contacting a confirmed case	Yes 13.2±10.6 No 10.5±9.6	0.006	Yes 10.5±9.9 No 6.9±7.9	<0.001	Yes 14.4±10.7 No 11.8±10.1	0.014
Contacting a suspected case	Yes 13.2±10.7 No 10.7±9.8	0.02	Yes 10.3±9.7 No 6.9±8.3)	<0.001	Yes 14.8±10.8 No 11.4±9.9	0.001
Having symptoms but did not test	Yes 19.0±12.0 No 10.8±9.6	<0.001	Yes 15.3±10.9 No 7.7±8.4	<0.001	Yes 19.8±11.9 No 12.1±10.0	<0.001
The degree of commitment to taking precautions	Little commitment Committed to some extent	0.034	–	–	–	–
	Little commitment Rather much committed	0.03				
	Little commitment Always committed	0.045				
Satisfaction with information about the pandemic	Very dissatisfied 16.6±12.0 Satisfied 10.5±9.6	<0.001	V. dissatisfied 11.7±11.5 Satisfied 8.1±8.4	0.006	V. dissatisfied 16.0±12.5 Satisfied 12.5±10.9	0.028
	Dissatisfied 13.4±10.5 Satisfied 10.5±9.6	0.020				
Having sufficient information about the vaccine	Yes 10.4±9.5 No 13.9±11.1	0.001	Yes 6.9±7.9 No 10.7±10.1	<0.001	Yes 11.3±9.8 No 15.3±11.3	<0.001
	Not sure 11.3±10.5 No 13.9±11.1	0.041	Not sure 8.4±9.1 No 10.7±10.1	0.050	Not sure 12.5±10.3 No 15.3±11.3	0.031

ANOVA analysis revealed significant differences in anxiety scores based on the following factors: knowing someone infected with COVID-19 (p=0.002), contacting a confirmed case (p<0.001), contacting a suspected case (p<0.001), having symptoms but not testing (p<0.001), satisfaction with pandemic information (p=0.008), and having sufficient information about the vaccine. The post-hoc significant differences for these comparisons are shown in Table 4. The t-test results showed significant effects of testing positive for COVID-19 and the need for more information about the pandemic. Testing positive showed a significantly higher anxiety score than testing negative (p<0.001), and participants who needed more information about the pandemic showed a significantly higher anxiety score than those who did not (p<0.001). ANOVA testing revealed significant differences in stress scores for contacting a confirmed case (p=0.011), contacting a suspected case (p=0.002), having symptoms but not testing (p<0.001), satisfaction with pandemic information (p=0.017], and having sufficient vaccine information (p<0.001). Table 4 shows post-hoc significant differences.

DISCUSSION

The 2019 coronavirus disease (COVID-19) pandemic has had a wide-ranging impact on our life, including our mental health. We conducted the survey with a total of 642 individuals. To the best of our knowledge, just a few studies have investigated the impact of COVID-19 on the Jordanian population's mental health. Our findings suggested that the COVID-19 pandemic has had a significant negative impact on mental health (as judged by the DASS) in Jordan's general population. This results in a higher mean stress score (13.49), followed by depression (12.26) and anxiety (9.04), as well as substantial increases in levels of severe and extremely severe anxiety (22.2%), depression (19.5%), and stress (15.9%). This increase can be attributed to a variety of factors, including anxiety about becoming infected with COVID-19, particularly following a rapid spike in confirmed cases and deaths, uncertainty about the future, and financial disruptions [27]. Furthermore, authorities used preventive measures such as isolation and lockout [28,29]. Our results are comparable with those reported in [28,30,31]. These findings revealed that clinical psychology interventions must be implemented immediately in order to successfully support persons suffering from coronavirus-related psychological health issues. Our findings revealed that nearly half of those polled had a solid understanding of the COVID-19 pandemic, with 62% satisfied or extremely satisfied with the disease information available. Our research also revealed that official sources were the most common sources of information on the COVID-19 disorder. Such findings highlighted

the significance of government health authorities delivering evidence-based information on COVID-19 health issues. Our study also discovered that depression, anxiety, and stress symptoms were directly related to testing positive for COVID-19. For example, persons who tested positive for COVID-19 reported higher levels of sadness, anxiety, and stress than those who tested negative. This can be explained by their dread of COVID-19 disease complications and the risk of infecting their families and loved ones. Our findings are comparable with those of Daly & Robinson (2023), who discovered an increase in psychological symptoms in those who tested positive for COVID-19. Furthermore, the findings are consistent with a study conducted in the United Kingdom [31], in which researchers discovered a decline in mental health among those who tested positive for COVID-19. Furthermore, our data suggested that people who need more information about coronavirus infection had a higher risk of anxiety.

Study limitations

Our study has a few limitations that should be carefully considered. These include utilizing a cross-sectional design, which is not appropriate for investigating casual relationships. Furthermore, we conducted the study using an online survey and a self-questionnaire assessment approach. Furthermore, despite the high sample size, the majority of the participants were young, educated, and actively seeking information regarding vaccines. This means that our study's representative sample could be constrained, rendering it unrepresentative of the Jordanian population. Finally, future studies using other evaluation methodologies are needed to improve the generalizability of the findings.

Conclusion

In Jordan in 2021, the percentages of people with moderate to extremely severe depression, anxiety, and stress were 19.5%, 22.2%, and 15.9%, respectively, during the COVID-19 pandemic. The results demonstrated that during the COVID-19 epidemic, anxiety and depression were more common in Jordanians. The study revealed variations in stress and depression symptoms related to contact with COVID-19 cases, the level of pandemic information, and public perception of vaccines. So, protecting people's mental health requires encouraging governments and healthcare systems to innovate, become more adaptable, and change course when necessary. Technology and the media might be useful tools in achieving this goal. Apart from this, the greatest way to prevent more severe impacts on the public's mental health currently is to prepare the public for potential future waves of the epidemic.

Conflict of interests

No conflict of interests was declared by the authors.

Funding source

The authors did not receive any source of fund.

Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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