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The effect of Quarantine Period During COVID-19 Pandemic on the psychological aspects among Jordanian sample

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Abstract

This study aims to investigate the psychological dimensions of cognitive, emotional, and behavioral aspects that arise as a consequence of COVID-19-related quarantines. Moreover, considering demographic factors, we hypothesize that these quarantines may influence the cognitive, emotional, and behavioral aspects. We performed a descriptive cross-sectional design using an online survey (Google Forms) to gather data from a cohort of Jordanian participants during the period of quarantines spanning from March 21st to May 31st, 2020. The study sample contained (1577) individuals aged between 15 and 65 years. The survey employed a validated Arabic psychological scale. Findings revealed that the cognitive aspect experienced the most effect during the quarantine period in Jordan, followed by the behavioral aspect. Differences were observed in emotional and behavioral aspects across age group and marital status. Furthermore, age and gender appeared as predictors of psychological dimensions. Cognitive aspect was the most aspect affected by quarantine periods. We propose the implementation of psychological awareness programs by governmental organizations to address the cognitive, emotional, and behavioral concerns that may arise during pandemics.

Keywords: Cognitive, emotional, behavioral, quarantine, COVID-19, Jordan.

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أثر الحجر الصحي خلال فترة جائحة كورونا على الجوانب النفسية لدى عينة من المجتمع الأردني

د/ دعاء العدوان(*) & عثمان الفقهاء(**) & نهال الوزن(***)

مستخلص الدراسة

هدفت هذه الدراسة إلى معرفة تأثير الحجر الصحي خلال فترة جائحة كورونا ١٩ على الجوانب النفسية التي تشمل الجوانب المعرفية، والعاطفية، والسلوكية. علاوة على ذلك، هدفت الدراسة أيضاً لمعرفة الفروقات تبعا للعوامل الديموغرافية أثناء فترة الحجر الصحي على الجوانب المعرفية، والعاطفية، والسلوكية. استخدم التصميم الوصفي المقطعي من خلال استبانة وزعت عبر الإنترنت (Google Forms) لجمع البيانات من مجموعة من المشاركين الأردنيين خلال فترة الحجر الصحي الممتدة من ٢١ مارس إلى ٣١ مايو ٢٠٢٠؛ حيث تكوّنت عينة الدراسة من (١٥٧٧) فرداً تتراوح أعمارهم بين ١٥ و ٦٥ عامًا. تم استخدام مقياس باللغة العربية بعد ايجاد دلالات الصدق والثبات لديه. أشارت نتائج الدراسة إلى أن الجانب المعرفي الأكثر تأثراً خلال فترة الحجر الصحي في الأردن، يليه الجانب السلوكي ثم العاطفي. كما أشارت نتائج الدراسة إلى أن فروقات دالة احصائياً في الجوانب العاطفية والسلوكية تبعا لمتغيري الفئة العمرية والحالة الاجتماعية. علاوة على ذلك، أشارت النتائج إلى متغيري العمر والجنس هما الأكثر قدرة على التنبؤ بالأبعاد النفسية الثلاثة. إن الجانب المعرفي هو الجانب الأكثر تأثراً بإجراءات الحجر الصحي. تقترح هذه الدراسة تنفيذ برامج توعية نفسية من قبل الجهات الحكومية لمعالجة القضايا المعرفية والعاطفية والسلوكية التي قد تنشأ أثناء الازمات كجائحة كورونا.

الكلمات المفتاحية: المعرفي، الانفعالي، السلوكي، الحجر صحي، جائحة كورونا، الأردن.

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Introduction:

In the year 2019, a previously unknown pandemic surfaced, posturing a substantial threat to humanity. The first recorded instance of this pandemic, known as Coronavirus 2019 (COVID-19). This event marked the beginning of a severe global health crisis (Hui et al., 2020). The rapid transmission of pandemics and the inherent sense of threat it generates can induce a wide range of involved mental responses and patterns of behavior among individuals. They vary in their cognitive processes, emotional reactions, and exhibited symptoms, ranging from intense fear to a state of indifference. Some individuals may experience severe anxiety, which can give rise to mental health challenges such as mood disorders and panic-buying behaviors, including storing medications, disinfectants, and food supplies (Alfuqaha et al., 2022).

People can respond differently to the COVID-19 pandemic. For example, some of them adhere to global recommendations to maintain physical distance, practice good hygiene, wear protective masks and stay at home due to lockdown by governments. These restrictions on activity and lifestyle accelerate some mental health issues, including depression, anger, and anxiety levels (Webster et al., 2020). Moreover, lockdown/quarantine periods through countries increase social isolation (Pietrabissa & Simpson, 2020), traumatic experiences (Holman et al., 2022), violence (Pietrabissa & Simpson, 2020), sleep problems (Arora & Grey, 2020), and mental health challenges (Alfuqaha et al., 2021). These issues have a direct effect on cognitive processes, behavioral patterns, and emotional processes as illustrated by a systematic review study which found that during quarantine periods, people are suffering more levels of frustration, helplessness, lack of

control, and financial loss (Brooks et al., 2020). However, in previous studies, little are known about which psychological dimensions of cognition, emotion, and behavior are more affected during this period.

Contribution of demographic information during quarantine periods remains unclear. In 2020, a study found that females are more likely to be affected by depression than males (Verma & Mishra, 2020). People aged over 40 years old in Bangladesh exhibit higher anxiety levels during quarantine periods. In Jordan, the lower the income level of an individual, the greater challenges of quarantine (Massad et al., 2020).

Study aims:

This study represents the first attempt in Jordan to explore the impact of quarantine periods during the COVID-19 pandemic on cognitive, emotional, and behavioral aspects among Jordanian people. Additionally, we assumed that demographic factors would contribute to variations in individuals' cognitive, emotional, and behavioral functioning in relation to the effects of quarantine.

Theoretical concepts:

Quarantine period: The period of lockdown that announce according to each country to limit the spread of Coronavirus which was between March and June 2020 (Brooks et al., 2020).

COVID-19 pandemic: Viral affected the respiratory system and spread via actual contact with infected people (Constant et al., 2020).

Psychological aspects: It can be defined that the impact of Coronavirus toward cognitive, behavioral, and emotional of human being (Banna et al., 2022).

Study questions:

- 1- What is the most common aspect of cognitive, emotional, and behavioral affected during the period of quarantine among Jordanians?
- 2- Are there statistically significant differences based on cognitive, emotional, and behavioral aspects related to gender, marital status, age, income, and educational levels during the period of quarantine among Jordanians?
- 3- What are the contributions of the selected demographic factors in predicting psychological dimensions during the period of quarantine among Jordanians?

Methods:**Study design and procedures:**

A descriptive cross-sectional design was employed during the quarantine period from March 2020 to June 2020 in Jordan. To collect data, a Google Form was created, incorporating the study tools, and shared across various social media including Facebook, Telegram, and WhatsApp. All Jordanians with access to social media were invited to participate voluntarily in the survey and encouraged to share it with their family members. Participants under the age of (15) were excluded from the study if they answered. Over a two-month period of data collection, (1661) individuals responded to the online survey. The initial question on our online Google Form sought the official participants' consent, and by selecting "Yes," they provided their explicit agreement to participate. However, after removing outliers and individuals under the age of (15), the final sample size consisted of (1577) participants. This number of participants is considered adequate

for cross-sectional studies (Hair et al., 2014). The survey began with a consent form as the first question, followed by gathering demographic data for example gender, marital status, and age. The study tools were subsequently administered. Completing the survey typically required approximately (5) minutes of participants' time.

Study tools:

Demographic factors were assessed by requesting participants to provide information regarding their gender, marital status, age (ranging from 15 years to 65 years or older), income level (categorized as less than 500 Jordanian dinars up to more than 1500 Jordanian dinars), and educational attainment (ranging from equal or less than high school education to a Ph.D. degree).

Psychological scale:

We conducted a thorough review of previously published scales that examined the impact of COVID-19 on psychological dimensions. We focused on three key dimensions: cognitive, emotional, and behavioral. The cognitive dimension comprised of (11) items, which were adapted from (Constant et al., 2020; Xin et al., 2020), to assess cognitive aspects such as thoughts about COVID-19, positive and negative information, and perceptions of sanitizers. The emotional dimension consisted of (11) items, adopted from (Di Renzo et al., 2020; Mucci et al., 2020), to capture emotional aspects, including fear and feelings of isolation. Lastly, a (23) items adapted from (Qian et al., 2020; Li et al., 2020) was performed to assess the behavioral aspect. The study tool utilized a five-point Likert-type scale to assess participants' responses ranging from (Strongly Agree to Strongly Disagree). We depend on mean score to find cut-off points; thus, a

high mean score indicates a high effect of quarantine on psychological dimensions. However, before conducting these scales to participants, we assured their validity and reliability in the Arabic context as illustrated below. See pages 10 &11.

Translation process:

We requested from 3 English experts to provide their suggestion regarding sentences from clarity in meaning. After that, another 3 Arabic-English experts asked for advice on English to Arabic translation. Agreement from the experts has been confirmed to administer the scale to participants.

Content validity:

We asked (6) experts with PhDs degree in psychology to assess the items based on clarity, appropriateness, and suitability for the local environment. A total agreement of at least (80%) is considered (Sharif et al., 2017). Hence, no items were omitted from the scale, but some paraphrases to items were applied based on experts' feedback in terms of suitability to local needs.

Construct validity:

Correlation coefficient was calculated between each item and it's their dimensions and with overall score. A correlation of (0.30) is acceptable based on literature (Schreiber, 2021). Cognitive items ranged between (0.31 - 0.91) and (0.33 to 0.80) for the overall scale. Emotional items extended between (0.33 - 0.86) and (0.34 - 0.76) for the overall scale. Behavioral items ranged between (0.33 - 0.85) and (0.33 to 0.79) for the overall scale. Besides, component result of varimax rotation and total variance are demonstrated in Table 1.

Table (1)**Varimax Rotation of Items in the Psychological Scale (N=1577).**

Items	Cognitive dimension	Emotional dimension	Behavioral dimension
Q1	0.776		
Q2	0.764		
Q3	0.762		
Q4	0.655		
Q5	0.643		
Q6	0.632		
Q7	0.583		
Q8	0.551		
Q9	0.543		
Q10	0.389		
Q11	0.356		
Q12		0.743	
Q13		0.723	
Q14		0.698	
Q15		0.661	
Q16		0.651	
Q17		0.542	
Q18		0.541	
Q19		0.442	
Q20		0.392	
Q21		0.358	
Q22		0.319	
Q23			0.799
Q24			0.752
Q25			0.706

Items	Cognitive dimension	Emotional dimension	Behavioral dimension
Q26			0.693
Q27			0.691
Q28			0.661
Q29			0.626
Q30			0.624
Q31			0.607
Q32			0.56
Q33			0.518
Q34			0.514
Q35			0.501
Q36			0.501
Q37			0.456
Q38			0.441
Q39			0.415
Q40			0.402
Q41			0.342
Q42			0.322
Q43			0.319
Q44			0.312
Q45			0.799
Initial eigenvalues	9.42	4.32	2.12
Percentage of variance explained	24.12	12.12	7.25
Cumulative variance	24.12	36.24	43.49

The factor loading for all dimensions of the psychological scale was above (0.30), indicating a satisfactory level of association between the items and their respective dimensions. The eigenvalues, which were above 1, further supported the adequacy of the factor analysis. Collectively, the three dimensions of the psychological scale accounted for a cumulative variance of (43.49%), representing a good model fit.

The correlation coefficients (r) demonstrated significant positive relationships between the dimensions of psychological aspects, as illustrated in Figure 1. This suggests that cognitive, emotional, and behavioral dimensions are interrelated and influence each other within the context of the psychological scale.

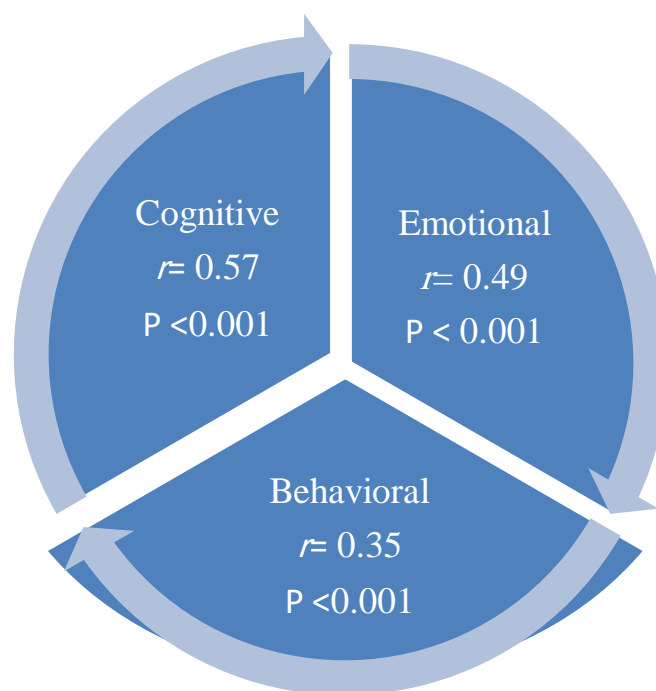


Figure (1)

Relationships between the psychological dimensions. r :

Pearson correlation coefficients. P: P-value.

Our findings revealed statistically significant positive relationships between the behavioral and cognitive dimensions ($r = 0.35$, $P < 0.001$), cognitive and emotional dimensions ($r = 0.57$, $P < 0.001$), and emotional and behavioral dimensions ($r = 0.49$, $P < 0.001$). These results indicate that the three categories, namely behavioral, cognitive, and emotional, are reflective of the psychological dimensions measured by the scale.

Reliability:

The reliability was assessed by using two methods: internal consistency through Cronbach's alpha and split-half consistency using the Guttman formula. The Cronbach's alpha coefficient for the total score of the psychological scale was 0.938, indicating a high level of internal consistency. For the individual dimensions, the Cronbach's alpha coefficients were 0.855 for cognitive, 0.882 for emotional, and 0.893 for behavioral dimensions. These coefficients suggest good internal consistency within each dimension of the scale. Furthermore, the results for individual dimensions after using the Guttman Formula were 0.963 for emotional, 0.80 for cognitive, and 0.967 for behavior. Accordingly, reliability achieved the criteria level.

Data Analysis

The Researchers analyzed data by using SPSS V23. We conducted a several statistical method including descriptive statistics, Pearson correlation test (r), ANOVA test, and t-test for independent sample.

We compared the means of different groups and determine if there were significant differences based on demographic factors. Additionally,

regression analysis was employed to identify the demographic factors that served as the most significant predictors of psychological dimensions. This analysis allowed for understanding the extent to which demographic variables influenced the cognitive, emotional, and behavioral dimensions.

Ethical considerations:

Before proceeding with the study, participants were presented with the first question, which inquired about their willingness to participate in the study ("Do you agree to participate in this study? Yes or No"). The online survey prominently displayed the study's purpose, ethical guidelines, and emphasized that participation was entirely voluntary.

Results:

A significant proportion of the participants, accounting for over two-thirds, were identified as female. Among the participants, individuals between the ages of (25-34) years constituted a notable subgroup, representing approximately (27.6%) of the total sample. Furthermore, a considerable majority of the participants, approximately (55.8%), reported being married. Table 2 presents the demographic characteristics.

Table (2)
Demographic characteristics (N= 1577).

Factors	Descriptive	Frequency	Percentage %
Gender	Male	366	23.2
	Female	1211	76.8
Marital status	Single	574	36.4
	Married	880	55.8
	Widow	41	2.6
	Divorced	82	5.2
Age (Year)	15-24	341	21.6
	25-34	436	27.6
	35-44	400	25.4
	45-54	286	18.1
	55-64	97	6.2
	≥65	17	1.1
Income (Jordan Dinar (JD) = 0.70\$)	Less than 500 JD	181	11.5
	501-1000 JD	128	8.1
	1001-1500 JD	674	42.7
	More than 1500 JD	594	37.7
Educational levels	Less than high school	92	5.8
	High school	190	12
	Diploma	140	8.9
	Bachelor's degree	893	56.6
	Master's degree	60	3.8
	PhD degree	202	12.8

The examination of the results adheres to the logical progression of the study's questions. In order to identify the prevailing psychological dimensions (cognitive, emotional, and behavioral) impacted by COVID-19 among Jordanians during the quarantine period, we conducted an analysis of the mean scores, standard deviations, and overall levels. These findings are abridged in Table 3.

Table (3)
Descriptive statistics and overall levels of psychological dimensions (N= 1577)

Psychological dimensions	Mean	Standard deviation	Overall levels
Cognitive	3.837	0.459	High
Emotional	3.372	0.484	Moderate
Behavioral	3.802	0.403	High
Overall score	3.683	0.55	High

The cognitive aspect exhibits the highest mean score of (3.837 ± 0.459), indicating that it is the most affected aspect during the quarantine period in Jordan. The behavioral dimension also receives a high mean score of (3.802 ± 0.403). The emotional aspect demonstrates a moderate mean score of (3.372 ± 0.484). Overall, the psychological dimensions receive a notably high mean score.

We identified the items with the highest and lowest mean scores within each dimension. In the cognitive dimension, the mean scores ranged from (2.815 to 4.692). The item "I think that deploying the military would not maintain COVID-19" attained the highest mean score of (4.692 ± 0.584), indicating strong agreement with this statement. Conversely, the item "I think that the spread of the pandemic is God's punishment" received the lowest mean score of (2.815 ± 1.044), suggesting relatively lower agreement.

Regarding the emotional aspect, the mean scores varied from (1.954 to 4.415). The item "I feel bored and wish to leave home" obtained the highest mean score of (4.415 ± 0.788), indicating a prevalent sense of boredom and

desire to go outside. Conversely, the item "I feel scared of the thought of losing anyone due to the pandemic" received the lowest mean score among the emotional items. In the behavioral dimension, the mean scores ranged from (2.923 to 4.692). The item "I share information without verifying its credibility" attained the highest mean score of (4.692 ± 0.584), suggesting a tendency to share information without confirming its accuracy or reliability.

Table 4 presents the variations observed in cognitive, emotional, and behavioral aspects among participants during the quarantine period, based on factors of gender, marital status, age, income, and educational levels.

Table (4)
Differences in Cognitive, Emotional, and Behavioral Aspects
Based on Selected Demographic Factors (N = 1577)

Variable		Mean	SD	F/t-test values	P-value
Gender	Male	3.899	0.440	5.518	0.019*
	Cognitive	Female	3.959		
Emotional	Male	3.201	0.486	0.301	0.584
	Female	3.217	0.483		
Behavioral	Male	3.563	0.342	8.649	<0.001***
	Female	3.626	0.361		
Marital status	Single	3.953	0.424	0.798	0.495
	Married	3.942	0.427		
	Widow	3.854	0.385		
	Cognitive	Divorce	3.970		
Emotional	Single	3.145	0.473	7.766	<0.001***
	Married	3.248	0.484		
	Widow	3.153	0.490		
	Divorce	3.345	0.50		
Behavioral	Single	3.542	0.369	12.591	<0.001***
	Married	3.644	0.341		
	Widow	3.700	0.287		
	Divorce	3.702	0.396		

Variable		Mean	SD	F/t-test values	P-value
Age (Year) Cognitive	15-24	3.894	0.425	1.826	0.090
	25-34	3.939	0.436		
	35-44	3.951	0.419		
	45-54	3.972	0.419		
	55-64	4.032	0.460		
	65 ≤	3.818	0.257		
Emotional	15-24	3.046	0.436	15.050	<0.001***
	25-34	3.195	0.467		
	35-44	3.237	0.486		
	45-54	3.319	0.462		
	55-64	3.458	0.542		
	65 ≤	3.127	0.587		
Behavioral	15-24	3.476	0.362	15.668	<0.001***
	25-34	3.586	0.363		
	35-44	3.665	0.332		
	45-54	3.679	0.331		
	55-64	3.762	0.337		
	65 ≤	3.665	0.383		
Income Cognitive	Less than 500 JD			8.843	<0.001***
	500-1000 JD	3.454	0.390		
	1001-1500 JD	3.421	0.427		
	More than 1500 JD	3.309	0.416		
		3.836	0.431		
Emotional	Less than 500 JD			7.379	<0.001***
	500-1000 JD	3.626	0.395		
	1001-1500 JD	3.603	0.416		
	More than 1500 JD	3.503	0.416		
		3.557	0.403		
Behavioral	Less than 500 JD			2.302	0.075
	500-1000 JD	3.833	0.315		
	1001-1500 JD	3.830	0.288		
	More than 1500 JD	3.785	0.335		
		3.821	0.321		

Variable		Mean	SD	F/t-test values	P-value
Educational level Cognitive	< high school			12.036	<0.001***
	High school	3.548	0.431		
	Diploma	3.226	0.397		
	degree	3.307	0.307		
	BSc	3.354	0.417		
	degree	3.315	0.348		
	Master degree	3.486	0.431		
Emotional	< high school			2.839	0.015*
	High school	3.536	0.299		
	Diploma	3.555	0.347		
	degree	3.543	0.314		
	BSc	3.536	0.380		
	degree	3.563	0.350		
	Master degree	3.604	0.427		
Behavioral	< high school			3.761	0.002**
	High school	3.940	0.299		
	Diploma	3.780	0.347		
	degree	3.820	0.314		
	degree	3.800	0.329		
	BSc	3.766	0.268		
	degree	3.821	0.302		
Master degree					

Variable	Mean	SD	F/t-test values	P-value
PhD degree				

Note. SD: Standard deviation. JD: Jordanian Dinar, 1JD= 0.70\$. F: F-distribution. t-test: Independent sample t-test. *P ≤ 0.05, **P ≤ 0.01, ***P ≤ 0.001.

The findings showed in Table 4 that female participants experience greater susceptibility to cognitive and behavioral aspects compared to their male counterparts. Single participants, in contrast to those who are married, divorced, or widowed, display relatively lower psychological impact from the quarantine, although divorced participants exhibit the highest mean scores in emotional and behavioral aspects. Notably, significant variations in emotional and behavioral dimensions emerge across different age groups, with the age range of (55-64) representing the highest mean score.

Furthermore, the cognitive aspect appears to be more influenced by individuals' financial levels, whereby lower financial status corresponds to a greater impact. Conversely, the emotional aspect shows a stronger association with lower financial levels. Lastly, educational level below high school attainment is related to a higher prevalence of cognitive and behavioral issues compared to other educational degrees. Conversely, individuals holding a Ph.D. degree exhibit a higher occurrence of cognitive issues compared to other educational levels. Table 5 presents the relationship between selected demographic factors and psychological dimensions.

Table (5)
Predictors of psychological dimensions (N= 1577).

Model	R	R ²	R change	Unstandardized Coefficients		T	P-value
				B	Std. Error		
1 ^a	0.199	0.040	0.040	3.513	0.017	203.997	<0.001***
				0.048	0.006	8.056	<0.001***
2 ^b	0.208	0.043	0.004	3.439	0.035	97.757	<0.001***
				0.048	0.006	8.056	<0.001***
				0.042	0.017	2.414	0.016*

^aPredictors: (Constant), Age.

^bPredictors: (Constant), Age, gender. *P ≤ 0.05, ***P ≤ 0.001.

The step-wise regression analysis revealed that age and gender are significant predictors of psychological dimensions, explaining a total variation of (4.3%). However, the remaining demographic factors were not included.

Discussion:

This study highlights that the cognitive aspect appears as the dimension most significantly impacted during the quarantine period in Jordan, as a result of the COVID-19 pandemic. Differences in emotional and behavioral aspects are observed among various age groups and marital statuses. Additionally, age and gender are considered factors affecting psychological dimensions during the quarantine period. Also, the study emphasizes the validity and reliability of the Arabic-validated psychological scale in measuring cognitive, emotional, and behavioral constructs, as it meets the established criteria levels. In a previous study conducted within the Arabic context, a set of (15) items were identified as relevant and reliable for assessing psychological antecedents related to vaccines (Abd ElHafeez

et al., 2021). More recently, another study confirmed the validity and reliability of the Arabic well-being scale (Yaaqeib et al., 2022). However, we presented a validated Arabic (45) items to measure the impact of quarantine on cognitive, emotional, and behavioral aspects.

Cognitive aspect exhibited the highest mean score. This means it was affected the most compared to other aspects. We found that the thought process of ensuring daily living, including food, water, and basics, was a top priority for participants. Moreover, the lack of income resources led people to overthink to obtain these necessities. Several studies confirm our findings such as Webster et al. (2020) and Brooks et al. (2020). Unfortunately, participants expressed misleading information about the nature of the virus made them more confused and deep thinkers. We propose that local governments should keep open channels with their residents to mitigate overthinking.

The second psychological dimensions affected during the quarantine period is behavioral. Several behaviors noticed among participants which are panic buying, purchasing extra sanitization products, and increased engaging with social media (Alfuqaha et al., 2022). It is noteworthy to mention that other behaviors were noticed in previous studies, such as insomnia, a significant decrease in activity, as well as an increase in purchasing sanitization and substance abuse (Arora & Grey, 2020; Chiu et al., 2020). In Ghana, a decline in spiritual behavior was found, especially during the quarantine period (Osei-Tutu et al., 2021).

Surprisingly, the emotional aspect was the least affected compared to other psychological dimensions, indicating a moderate level. Despite findings in several previous studies suggesting the emotional aspect was the

most affected (Pedrosa et al., 2020; Gismero-González et al., 2020), our finding did not support this conclusion. However, in Bangladesh, stress and depression were found to be the most affected during quarantine periods among their population (Banna et al., 2022). Others found that boredom, fear, and distress were the most emotions emerged (Guillon & Kergall, 2020). We believe that rumors are the main responsible for increasing emotional distress among the population (Ahmad & Murad, 2020).

In terms of cognitive and behavioral dimensions, it was observed that female participants exhibited a higher tendency for experiencing adverse cognitive outcomes compared to their male counterparts. This finding was attributed to their societal role within Jordanian culture, which incorporates responsibilities related to domestic management, child-rearing, and overseeing the well-being of their family members. This outcome aligns with the conclusions of a prior study (Thibaut et al., 2020); however, it deviates from previous studies Zhao et al., (2022) that indicated only minimal differences in the cognitive and behavioral effects of the pandemic among male and female students in the United States.

It is noteworthy that individuals who were divorced or widowed experienced the most negative consequences during the quarantine period, as they are likely responsible for caring for their families and meeting their needs. These findings shed light on the significant challenges faced by widows and divorcees during times of crisis. We found that married people often face more challenges than single people which is comparable with the study of Alfuqaha et al., (2022). In a previous study, they found that single participants were more panicked than married participants (Omar et al., 2021). Participants aged (45) or older were significantly more affected by the quarantine period than other age groups. It refers to physical demand, job

insecurity, and responsibility of this age group (Maroto et al., 2021; Pasion et al., 2020). A study by Banna et al. (2020) reported a higher level of anxiety among the same age group. The Norwegian population showed increased psychological distress during this period (Blix et al., 2021). Finally, results showed that both variables of age and gender are interpreters of psychological dimensions. Thus, these factors affect the cognitive, behavioral, and attitude of individuals due to what is mentioned above. However, other factors were found to be associated with psychological distress. For instance, low income (Bonati et al., 2022), rural areas (Shen et al., 2022), and lack of socialization.

Strengths and limitations:

Studying psychological dimensions collectively during the quarantine period is considered one of the strengths of this study. Moreover, validating an appropriate scale to measure it in the Arabic language is also a strength. However, the limitations of this study are cross-sectional design, relatively small sample size, and online survey methods.

Conclusion and recommendation

During the quarantine period in Jordan, our study revealed that the cognitive aspect was most significantly affected by the COVID-19 pandemic during the quarantine period. Variations in emotional and behavioral aspects were observed among different age groups and marital statuses. Moreover, age and gender found to be predictors in determining psychological outcomes during the quarantine period. Based on our findings, we recommend the implementation of psychological awareness programs by governmental agencies to address cognitive challenges, emotional issues, and behavioral concerns arising from such a pandemic. Further demographic

factors are needed to assess their influence on psychological dimensions collectively.

Conflicts of Interests

None declare.

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References

- Abd ElHafeez, S., Elbarazi, I., Shaaban, R., ElMakhzangy, R., Ossama Aly, M., Alnagar, A., Yacoub, M., El Saeh, H. M., Eltaweel, N., Alqutub, S. T., & Mohamed Ghazy, R. (2021). Arabic validation and cross-cultural adaptation of the 5C scale for assessment of COVID-19 vaccines psychological antecedents. *PloS one*, *16*(8), e0254595. <https://doi.org/10.1371/journal.pone.0254595>
- Ahmad, A. R., & Murad, H. R. (2020). The Impact of Social Media on Panic During the COVID-19 Pandemic in Iraqi Kurdistan: Online Questionnaire Study. *Journal of medical Internet research*, *22*(5), e19556. <https://doi.org/10.2196/19556>
- Alfuqaha, O. A., Aladwan, D. A., Al Thaher, Y., & Alhalaiqa, F. N. (2022). Measuring a panic buying behavior: the role of awareness, demographic factors, development, and verification. *Heliyon*, *8*(5), e09372. doi:10.1016/j.heliyon.2022.e09372
- Alodhayani, A. A., Almutairi, K. M., Alshobaili, F. A., Alotaibi, A. F., Alkhaldi, G., Vinluan, J. M., Albedewi, H. M., & Al-Sayyari, L. (2021). Predictors of Mental Health Status among Quarantined COVID-19 Patients in Saudi Arabia. *Healthcare (Basel, Switzerland)*, *9*(10), 1271. <https://doi.org/10.3390/healthcare9101271>

- Arora, T., & Grey, I. (2020). Health behaviour changes during COVID-19 and the potential consequences: A mini-review. *Journal of Health Psychology, 25*(9), 1155-1163. doi:10.1177/1359105320937053
- Banna, M. H. A., Sayeed, A., Kundu, S., Christopher, E., Hasan, M. T., Begum, M. R., Kormoker, T., Dola, S. T. I., Hassan, M. M., Chowdhury, S., & Khan, M. S. I. (2022). The impact of the COVID-19 pandemic on the mental health of the adult population in Bangladesh: a nationwide cross-sectional study. *International journal of environmental health research, 32*(4), 850–861. <https://doi.org/10.1080/09603123.2020.1802409>
- Blix, I., Birkeland, M. S., & Thoresen, S. (2021). Worry and mental health in the Covid-19 pandemic: vulnerability factors in the general Norwegian population. *BMC Public Health, 21*(1), 928. doi:10.1186/s12889-021-10927-1
- Bonati, M., Campi, R., & Segre, G. (2022). Psychological impact of the quarantine during the COVID-19 pandemic on the general European adult population: a systematic review of the evidence. *Epidemiol Psychiatr Sci, 31*, e27. doi:10.1017/s2045796022000051
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet, 395*(10227), 912-920. doi:10.1016/s0140-6736(20)30460-8
- Chiu, N. C., Chi, H., Tai, Y. L., Peng, C. C., Tseng, C. Y., Chen, C. C., . . . Lin, C. Y. (2020). Impact of Wearing Masks, Hand Hygiene, and Social Distancing on Influenza, Enterovirus, and All-Cause Pneumonia During the Coronavirus Pandemic: Retrospective National Epidemiological Surveillance Study. *J Med Internet Res, 22*(8), e21257. doi:10.2196/21257

- Constant, A., Conserve, D. F., Gallopel-Morvan, K., & Raude, J. (2020). Socio-Cognitive Factors Associated With Lifestyle Changes in Response to the COVID-19 Epidemic in the General Population: Results From a Cross-Sectional Study in France. *Front Psychol*, *11*, 579460. doi:10.3389/fpsyg.2020.579460
- Di Renzo, L., Gualtieri, P., Cinelli, G., Bigioni, G., Soldati, L., Attinà, A., . . . De Lorenzo, A. (2020). Psychological Aspects and Eating Habits during COVID-19 Home Confinement: Results of EHLC-COVID-19 Italian Online Survey. *Nutrients*, *12*(7). doi:10.3390/nu12072152
- Gismero-González, E., Bermejo-Toro, L., Cagigal, V., Roldán, A., Martínez-Beltrán, M. J., & Halty, L. (2020). Emotional Impact of COVID-19 Lockdown Among the Spanish Population. *Front Psychol*, *11*, 616978. doi:10.3389/fpsyg.2020.616978
- Giuntella, O., Hyde, K., Saccardo, S., & Sadoff, S. (2021). Lifestyle and mental health disruptions during COVID-19. *Proc Natl Acad Sci U S A*, *118*(9). doi:10.1073/pnas.2016632118
- Guillon, M., & Kergall, P. (2020). Attitudes and opinions on quarantine and support for a contact-tracing application in France during the COVID-19 outbreak. *Public Health*, *188*, 21-31. doi:10.1016/j.puhe.2020.08.026
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis: Pearson new international edition*. Essex: Pearson Education Limited.
- Holman, E. A., Jones, N. M., Garfin, D. R., & Silver, R. C. (2022). Distortions in time perception during collective trauma: Insights from

- a national longitudinal study during the COVID-19 pandemic. *Psychol Trauma*. doi:10.1037/tra0001326
- Hui, D. S., I Azhar, E., Madani, T. A., Ntoumi, F., Kock, R., Dar, O., Ippolito, G., Mchugh, T. D., Memish, Z. A., Drosten, C., Zumla, A., & Petersen, E. (2020). The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health - The latest 2019 novel coronavirus outbreak in Wuhan, China. *International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases*, 91, 264–266. <https://doi.org/10.1016/j.ijid.2020.01.009>.
- Li, J. B., Yang, A., Dou, K., Wang, L. X., Zhang, M. C., & Lin, X. Q. (2020). Chinese public's knowledge, perceived severity, and perceived controllability of COVID-19 and their associations with emotional and behavioural reactions, social participation, and precautionary behaviour: a national survey. *BMC Public Health*, 20(1), 1589. doi:10.1186/s12889-020-09695-1
- Maroto, M. L., Pettinicchio, D., & Lukk, M. (2021). Working Differently or Not at All: COVID-19's Effects on Employment among People with Disabilities and Chronic Health Conditions. *Sociological Perspectives*, 64(5), 876-897. doi:10.1177/07311214211012018
- Massad, I., Al-Taher, R., Massad, F., Al-Sabbagh, M. Q., Haddad, M., & Abufaraj, M. (2020). The impact of the COVID-19 pandemic on mental health: early quarantine-related anxiety and its correlates among Jordanians. *East Mediterr Health J*, 26(10), 1165-1172. doi:10.26719/emhj.20.115
- Matud, M. P., Zueco, J., Díaz, A., del Pino, M. J., & Fortes, D. (2022). Gender differences in mental distress and affect balance during the

- first wave of COVID-19 pandemic in Spain. *Current Psychology*. doi:10.1007/s12144-022-03282-w
- Mucci, F., Mucci, N., & Diolaiuti, F. (2020). Lockdown and Isolation: Psychological Aspects of Covid-19 Pandemic in the General Population. *Clin Neuropsychiatry*, 17(2), 63-64. doi:10.36131/cn20200205
- Omar, N. A., Nazri, M. A., Ali, M. H., & Alam, S. S. (2021). The panic buying behavior of consumers during the COVID-19 pandemic: Examining the influences of uncertainty, perceptions of severity, perceptions of scarcity, and anxiety. *Journal of Retailing and Consumer Services*, 62, 102600. doi:https://doi.org/10.1016/j.jretconser.2021.102600
- Osei-Tutu, A., Affram, A. A., Mensah-Sarbah, C., Dzokoto, V. A., & Adams, G. (2021). The Impact of COVID-19 and Religious Restrictions on the Well-Being of Ghanaian Christians: The Perspectives of Religious Leaders. *J Relig Health*, 60(4), 2232-2249. doi:10.1007/s10943-021-01285-8
- Pasion, R., Paiva, T. O., Fernandes, C., & Barbosa, F. (2020). The AGE Effect on Protective Behaviors During the COVID-19 Outbreak: Sociodemographic, Perceptions and Psychological Accounts. *Front Psychol*, 11, 561785. doi:10.3389/fpsyg.2020.561785
- Pedrosa, A. L., Bitencourt, L., Fróes, A., Cazumbá, M., Campos, R., de Brito, S., & Simões E Silva, A. (2020). Emotional, Behavioral, and Psychological Impact of the COVID-19 Pandemic. *Frontiers in psychology*, 11, 566212. https://doi.org/10.3389/fpsyg.2020.566212
- Pietrabissa, G., & Simpson, S. G. (2020). Psychological Consequences of Social Isolation During COVID-19 Outbreak. *Front Psychol*, 11, 2201. doi:10.3389/fpsyg.2020.02201

- Qian, M., Wu, Q., Wu, P., Hou, Z., Liang, Y., Cowling, B. J., & Yu, H. (2020). Anxiety levels, precautionary behaviours and public perceptions during the early phase of the COVID-19 outbreak in China: a population-based cross-sectional survey. *BMJ open*, *10*(10), e040910. doi:10.1136/bmjopen-2020-040910
- Schreiber, J. B. (2021). Issues and recommendations for exploratory factor analysis and principal component analysis. *Res Social Adm Pharm*, *17*(5), 1004-1011. doi:10.1016/j.sapharm.2020.07.027
- Sharif Nia, H., Shafipour, V., Allen, K.-A., Heidari, M. R., Yazdani-Charati, J., & Zareiyan, A. (2017). A Second-Order Confirmatory Factor Analysis of the Moral Distress Scale-Revised for Nurses. *Nursing Ethics*, *26*(4), 1199-1210. doi:10.1177/0969733017742962
- Shen, X., Li, Y., Feng, J., Lu, Z., Tian, K., & Gan, Y. (2022). Current status and associated factors of psychological resilience among the Chinese residents during the coronavirus disease 2019 pandemic. *International Journal of Social Psychiatry*, *68*(1), 34-43. doi:10.1177/0020764020980779
- Thibaut, F., & van Wijngaarden-Cremers, P. J. M. (2020). Women's Mental Health in the Time of Covid-19 Pandemic. *Front Glob Womens Health*, *1*, 588372. doi:10.3389/fgwh.2020.588372
- Verma, S., & Mishra, A. (2020). Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19. *International Journal of Social Psychiatry*, *66*(8), 756-762. doi:10.1177/0020764020934508
- Webster, R. K., Brooks, S. K., Smith, L. E., Woodland, L., Wessely, S., & Rubin, G. J. (2020). How to improve adherence with quarantine: rapid review of the evidence. *Public Health*, *182*, 163-169. doi:10.1016/j.puhe.2020.03.007

- Xin, M., Luo, S., She, R., Yu, Y., Li, L., Wang, S., . . . Lau, J. T. (2020). Negative cognitive and psychological correlates of mandatory quarantine during the initial COVID-19 outbreak in China. *Am Psychol*, 75(5), 607-617. doi:10.1037/amp0000692
- Yaaqeib, S., Lambert, L., Hadjisolomou, S., Al-Fazari, M., Selim, H., & Haque, A. (2022). Validation study of a wellbeing scale (SPANES) in the Arab Gulf region: A multicountry study. *PLoS one*, 17(5), e0268027. doi:10.1371/journal.pone.0268027
- Zhao, Y., Ding, Y., Shen, Y., & Liu, W. (2022). Gender Difference in Psychological, Cognitive, and Behavioral Patterns Among University Students During COVID-19: A Machine Learning Approach. *Front Psychol*, 13, 772870. doi:10.3389/fpsyg.2022.772870.