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## RESEARCH ARTICLE

### Fear, Optimism, Pessimism, and Resilience in Jordanian Population during COVID-19 Crisis

Abeer Shaheen<sup>1</sup>, Khaldoun Hamdan<sup>2</sup>, Ahmad M. Al-Bashaireh<sup>3</sup>, Maha Alkaid Albqoor<sup>1</sup>, Arwa Zumot<sup>1</sup> and Rabia Allari<sup>2,\*</sup>

<sup>1</sup>Department of Community Health Nursing, School of Nursing, University of Jordan, Queen Rania Street, Amman, Jordan

<sup>2</sup>Department of Acute and Chronic Care Nursing, Al-Ahliyya Amman University, Amman, Jordan

<sup>3</sup>Faculty of Health Science, Higher Colleges of Technology, Fujairah, United Arab Emirates

#### Abstract:

#### Background:

COVID-19 spread to pandemic levels in a matter of weeks. COVID-19 is a pandemic that affected people worldwide and resulted in negative psychological consequences. It is essential to understand the factors that assisted people in adapting to this pandemic.

#### Objective:

The study aimed to assess resilience and its predictors during the COVID-19 pandemic among the Jordanian population.

#### Methods:

A cross-sectional design with purposive snowball sampling was used. The sample included 913 participants. Data were collected using online questionnaires, including the Connor-Davidson Resilience Scale, Fear of COVID-19 Scale, and Arabic Scale of Optimism and Pessimism. Multiple linear regression was used to analyze the data.

#### Results:

The mean total score of fear, optimism, pessimism, and resilience was 17.54 (SD= 5.9), 51 (SD= 13.51), 24.84 (SD= 12.31), and 24.73 (SD=6.2), respectively. Up to 75% of the sample scored 29 or less on the resilience scale. Employment status, fear of COVID-19, optimism, and pessimism were significant predictors of resilience.

#### Conclusion:

Jordanian population showed lower resilience levels. Individuals who were employed, optimistic, and not pessimistic had a lower level of fear of COVID-19 and a higher level of resilience. The findings from the study emphasize the effect of the COVID-19 pandemic on essential aspects of the psychological health of populations.

**Keywords:** COVID-19, Fear, Optimism, Pandemic, Pessimism, Resilience.

#### Article History

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## 1. INTRODUCTION

In December 2019, a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2/COVID-19) epidemic began in China. The pandemic state was confirmed by the World Health Organization (WHO) in March 2020 [1]. In Jordan, as of June 18<sup>th</sup>, 2021, there have been 745,366 COVID-19 cases and 9,635

COVID-19 deaths reported [2]. A reasonable proportion of people with COVID-19 infection reported various symptoms ranging from mild to severe [1, 3 - 5]. The COVID-19 pandemic is a severe stressor that affects daily life in many ways, including economics, sociality, health, and psychology of people all over the world.

Since the declaration of the COVID-19 pandemic, many people have strived to survive and cope with the pandemic and lost family members and friends [6]. Other people lost their

\* Address correspondence to this author at the Department of Acute and chronic care nursing, Faculty of Nursing, Al-Ahliyya Amman University, Amman, Jordan; Tel: 00962778474473; E-mail: r.allari@ammanu.edu.jo

jobs or suffered financial insecurity [7]. Also, people must challenge restriction-related stressors, such as routines, crowding, and structure change [7]. Despite that, adapting to the stressors linked with the COVID-19 pandemic is essential. The ability to adapt and overcome the adversities associated with a stressor reflects the resilience of individuals [8 - 11]. Resilience is not a fixed state; it is dynamic, and any individual may swing between hope and hopelessness [6]. A study by Killgore *et al.* [12] surveyed 1,004 adults in the United States during the lockdown of the COVID-19 pandemic and showed their resilience to be below the published norm [12].

The COVID-19 pandemic involves acute crisis and loss events, disruptions in many aspects of life, and ongoing multi-stress challenges with evolving conditions. So, many factors may influence resilience during this pandemic. Fear, anxiety, stress, and depression are examples of these factors. Fear is the expected reaction of humans to any danger [13]. Pera [14] investigated fear of COVID-19 in general populations across nations and showed significant fear associated with COVID-19. Pera [14] also confirmed that fear and anxiety shape various attitudes that limit involvement in dangerous actions, and highly emotional reactions to the pandemic, along with risk factors, may result in pathological levels of negative emotions and related behaviors. A cross-sectional study on 772 Cuban participants showed 49.7% and 22.7% to have moderate and high levels of fear of COVID-19, respectively [15]. In a study on 3,700 Greek adults [16], 35.7% of the participants reported a high level of fear because of either having been infected with the virus, that is, personal experience with the sickness, or having someone near with COVID-19, that is, anxiety about family members, friends, and significant others. However, another cross-sectional study on 1,499 Indians showed that 54.8% of the participants reported low fear of the COVID-19 pandemic, which was related to a lower educational level that might substantially impact how an individual understands the illness [17]. A cross-sectional study conducted on 971 Turkish individuals showed fear of COVID-19 to be negatively associated with resilience ( $r = -.42, p < .001$ ) and hope ( $r = -.24, p < .001$ ); as a result, it might be claimed that developing resilience aids in managing with the fear and anxiety generated by COVID-19 [13].

Stressful life experiences, such as the coronavirus pandemic, have a substantial impact on an individual's psychological functioning and well-being, and they can trigger psychological issues, such as anxiety, social disengagement, and despair [18]. It is common to see individuals having different prospects for the future. Optimism and pessimism describe people's approach to anticipating the future, ranging from good to bad feelings toward future outcomes [18]. Conceptualizing these two concepts has contributed to finding empirical methods of assessing optimism and pessimism. Previous research has linked optimism to adaptive outcomes and well-being, such as life satisfaction, positive affectivity, self-esteem, and thriving, and suggested an indirect positive relationship between optimism and resilience explained by coping and positive thinking in an optimistic individual [19]. Conversely, pessimism has been linked to negative effects, such as sadness and anxiety [19]. Jovančević and Milićević [20] conducted a study that aimed to investigate the effect of

optimism-pessimism, general trust, and belief in conspiracy theories, as well as COVID-19-related anxieties, and resilience. The results showed that optimists with a high level of trust and those not believing in conspiracy theories had lower levels of fear and higher levels of resilience. Whereas, pessimists were more fearful associated with all information sources, implying that more knowledge leads to greater fear, which negatively affects resilience [20]. As a result, the beginning point of resilience is precisely the optimistic perspective of reality, since with a positive view and the ability to adjust to challenging events, better results, specifically resilience, can be produced [21].

In the current pandemic that is far from over, it is necessary to assess factors that affect resilience, such as optimism and pessimism. This would help mental health providers, such as psychologists and counselors, focus on improving and practicing learned optimism. Limited studies handle resilience besides other psychological factors in populations, particularly in Jordan. The results of this study can allow a comparative analysis at an international level and contribute to developing resilience-based interventions that can lessen the negative psychological consequences of the COVID-19 pandemic on the population. Therefore, this study aimed to assess the resilience of the Jordanian population during the COVID-19 crisis, and identify predictors of resilience in the Jordanian population during the COVID-19 crisis.

## 2. MATERIALS AND METHODS

### 2.1. Study Design

A correlational cross-sectional design was utilized to achieve the study's aim.

### 2.2. Settings and Sample

The study was conducted in Jordan. The sample included Jordanian citizens aged 18 and above who could read and understand Arabic. The sample size was calculated based on the Jordanian population of 10.55 million. The population above 18 years of age was estimated to be 6.92 million [22]. Applying a confidence level of 95% and a confidence interval of 4, the estimated sample size was 600. Sampling strategies, such as networking and snowballing, were utilized to reach the target population. The questionnaire link was distributed on social media to reach the target population.

### 2.3. Ethical Consideration

The researchers' universities' institutional review boards (IRB) authorized the study. No permits from institutions or facilities were necessary because the data were collected *via* an electronic self-administered questionnaire using networking and snowballing. Participants were assured that their replies were completely voluntary and would be kept strictly confidential. The participants' anonymity was maintained throughout the investigation. The consent form was placed on the first page of the survey as part of the link to the study. The participants were notified that clicking on the "next" button meant agreeing to participate in the study. Data were secured in

a password-protected laptop and a hard disk. Permission was obtained from the authors of the questionnaires to use in this study.

#### 2.4. Data Collection

An online self-administered questionnaire was used to collect data on the COVID-19 pandemic. Google Forms (<https://drive.google.com>) was used to create the questionnaire. Before participants began the questionnaire, a cover letter and participant information page were offered to them describing research goals and participation. Participants were given a URL to access and complete the questionnaire, and they were informed it would take 15-20 minutes to complete. All questions submitted were automatically kept in the researchers' private Google drive. Data were collected between October 1<sup>st</sup>, 2020, and October 30<sup>th</sup>, 2020.

#### 2.5. Measures

##### 2.5.1. Demographic Sheet

This part included information about age, sex, academic level, employment status, monthly income, marital status, health insurance, and the presence of chronic diseases.

##### 2.5.2. Resilience

It was measured using the Arabic version of the Connor-Davidson Resilience Scale (CD-RISC) developed by Drs. Campbell-Sills and Stein [23]. This scale involves ten statements that describe various characteristics of resilience. The scale is primarily used to assess hardiness, with items related to flexibility, self-efficacy, emotion regulation, optimism, and cognitive focus/maintaining attention under stress. Each item is rated on a five-point scale ranging from 0 (not true at all) to 4 (true nearly all the time). The total score can therefore range from 0 to 40. Higher scores imply higher resilience, whereas lower levels indicate less resilience or difficulties overcoming adversity. In earlier research conducted in various studies, the scale test-retest reliability varied from 0.61-0.96. [21]. The scale's Cronbach alpha reliability in this study was 0.80. "I can deal when changes occur," was a scale item.

##### 2.5.3. Fear of COVID-19

It was measured using the Fear of COVID-19 (FCV-19S) Scale. This scale measures fear levels of COVID-19 [24]. It consists of 7 item statements (for example, item 7: "When I think of having coronavirus-19, my heart races or palpitates") and is scored on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Summing all item scores yields a total score, with a possible total score ranging from 7 to 35. Higher scores imply a higher level of COVID-19 fear. The Arabic version of the scale on the Jordanian population has demonstrated solid psychometric features, including good

internal consistency ( $\alpha = 0.91$ ) [23]. The Cronbach alpha reliability of the scale in this study was 0.89.

##### 2.5.4. Optimism and Pessimism

They were measured using the Arabic Scale of Optimism and Pessimism (ASOP) [25]. The ASOP consists of two subscales to assess optimism and pessimism. Each subscale contains 15 statements to be answered on a five-point Likert scale (*i.e.*, 1=no, 2= a little, 3= moderate, 4= much, and 5= very). The total score for each subscale can range from 15 to 75. High scores indicate high optimism or pessimism. The Arabic version of the scale has been reported to be reliable and valid in previous studies [26, 27]. An example of scale items is "time is hiding pleasant surprises for me." The Cronbach alpha reliability of the optimism scale in this study was 0.97, and the pessimism scale was 0.96.

#### 2.6. Data Analysis

Data were analyzed using the Statistical Package for Social Science (SPSS) version 23 [28]. Descriptive statistics, including frequencies and percentages, were calculated to describe gender, academic level, employment status, monthly income, marital status, health insurance, presence of chronic disease, and resilience among the Jordanian population during the pandemic. Mean, standard deviation, and percentiles were calculated to determine the total score for resilience. Multiple linear regression was calculated to examine predictors of resilience. The results were considered statistically significant if  $\alpha$  was  $\leq 0.05$ .

### 3. RESULTS

#### 3.1. Description of Study Sample

The sample included 913 participants. The age ranged from 18 to 75 years ( $M= 33.69$ ,  $SD=10.15$ ). The sample consisted of 717 (78.5%) females and 196 (21.5%) males. The largest proportion of the sample reported having a bachelor's degree, *i.e.*, 615 (67.4%). Almost one-third of the population was unemployed, 188 (20.6%) worked in the educational sector, and 169 (18.5%) worked in the health sector. Most of the sample was married 552 (60.5%) and had health insurance 734 (80.4%), as can be seen from Table 1.

#### 3.2. Resilience among Jordanian Population during COVID-19 Pandemic

Table 2 describes different aspects of resilience and the four scales used in this study. The mean total score of the resilience scale was 24.73 ( $SD=6.2$ ). The total score ranged from 1 to 40. Up to 75% of the sample scored 29 or less on the resilience scale. The median item score for all items ranged from two to three. Specifically, the items "I try to see the comic side of the problems when I face them," "failure doesn't get me frustrated easily," and "under pressure, I can focus and think clearly" scored the lowest.

**Table 1. Descriptive characteristics of the study sample (N=913).**

Variable	N (%)	-
<b>Gender</b>	-	-
Male	196 (21.5)	-
Female	717 (78.5)	-
<b>Academic Level</b>	-	-
Less than high school	27 (3)	-
High school	75 (8.2)	-
Bachelor level	615 (67.4)	-
Graduate level	196 (21.5)	-
<b>Employment Status</b>	-	-
Do not work	291 (31.9)	-
In the industrial sector	9 (1)	-
In the commercial sector	34 (3.7)	-
In the agricultural sector	5 (0.5)	-
In the health sector	169 (18.5)	-
In the institutional sector	132 (14.5)	-
In the services/construction/marketing sector	53 (5.8)	-
In the educational sector	188 (20.6)	-
Free jobs	32 (3.5)	-
<b>Monthly Income</b>	-	-
Less than 352 JD	157 (17.2)	-
More than 352JD and less than 825 JD	412 (45.1)	-
More than 825 JD	344 (37.7)	-
<b>Marital Status</b>	-	-
Married	552 (60.5)	-
Divorced/widowed/separated	36 (3.9)	-
Single	325 (35.6)	-
<b>Do you have Health Insurance (Governmental/Military/Private/or any kind)?</b>	-	-
Yes	734 (80.4)	-
No	179 (19.6)	-
<b>Do you Suffer from Chronic Diseases?</b>	-	-
Yes	123 (13.5)	-
No	790 (86.5)	-
-	Mean (standard deviation)	Range
Age	33.69 (10.15)	18-75

### 3.3. Predictors of Resilience among Jordanian Population during COVID-19 Pandemic

Two levels of multiple linear regression were conducted. The first multiple linear regression model was significant ( $F_{8,904}=2.33$ ,  $p=0.018$ ), with  $R^2=0.02$ . In this model, employment status was the only significant predictor of resilience ( $p=0.001$ ). In the second model, fear of COVID-19,

optimism, and pessimism were added to the model. In this model, employment status remained a significant predictor ( $p<0.001$ ), and the three variables added to the model were found to be significant predictors of resilience ( $F_{11,901}=27.19$ ,  $P<0.001$ ), with  $R^2=0.25$ . The change in  $R^2$  was significant (0.23). All the assumptions of multiple linear regression were tested and met (Table 3).

**Table 2. Description of resilience aspects among the Jordanian population during the COVID-19 pandemic (N=913).**

Aspects of Resilience	Not True at all (1) N (%)	Rarely True (2) N (%)	Sometimes it is True (3) N (%)	Often Correct (4) N (%)	It is True almost all the Time (5) N (%)
<b>Flexibility</b>					
1. I can cope when changes happen	31 (3.4)	62 (6.8)	345 (37.8)	339 (37.1)	136 (14.9)
5. I tend to regain my balance after illness, injury, or another difficulty	21 (2.3)	36 (3.9)	163 (17.9)	424 (46.4)	269 (29.5)

(Table 2) contd.....

Aspects of Resilience	Not True at all (1) N (%)	Rarely True (2) N (%)	Sometimes it is True (3) N (%)	Often Correct (4) N (%)	It is True almost all the Time (5) N (%)		
<b>Flexibility</b>							
<b>Sense of self-efficacy</b>							
2. I can handle anything that happens in my life	31 (3.4)	62 (6.8)	345 (37.8)	339 (37.1)	136 (14.9)		
4. Having to deal with stress can make me a stronger person	85 (9.3)	95 (10.4)	255 (27.9)	331 (36.3)	147 (16.1)		
9. I consider myself a strong person when dealing with the challenges and difficulties of life	20 (2.2)	45 (4.9)	216 (23.7)	394 (43.2)	238 (26.1)		
<b>Ability to regulate emotion</b>							
10. I am able to deal with unpleasant or painful emotions, such as sadness, fear, and anger	52 (5.7)	100 (11)	280 (30.7)	330 (36.1)	151 (16.5)		
<b>Optimism</b>							
3. I try to see the comic side of the problems when I face them	150 (16.4)	174 (19.1)	378 (41.4)	170 (18.6)	41 (4.5)		
6. I believe I can achieve my goals even with obstacles	16 (1.8)	44 (4.8)	226 (24.8)	377 (41.3)	250 (27.4)		
8. Failure doesn't get me frustrated easily	76 (8.3)	136 (14.9)	282 (30.9)	291 (31.9)	128 (14)		
<b>Cognitive focus-maintaining attention under stress</b>							
7. Under pressure, I can focus and think clearly	126 (13.8)	135 (14.8)	315 (34.5)	241 (26.4)	96 (10.5)		
<b>Other items</b>	<b>M (SD)</b>	<b>Range</b>	<b>Percentile</b>			<b>Cronbach alpha</b>	-
			25	50	75		
Resilience scale total score	24.73 (6.2)	1-40	21	25	29	0.80	-
Fear scale	17.54 (5.9)	7-35	13	17	22	0.89	-
Optimism scale	51 (13.56)	15-75	44	51	60	0.97	-
Pessimism scale	24.84 (12.31)	15-75	16	20	29	0.96	-

Table 3. Multiple linear regression models predicting resilience among the Jordanian population during the COVID-19 pandemic (N=913).

Resilience among the Jordanian population during the COVID-19 pandemic								
Model One				Model Two				
Covariate	β (SE)	t-value	P-value	Covariate	β (SE)	t-value	P-value	
Age	-0.04 (0.03)	-0.92	0.360	Age	-0.03 (0.03)	-0.62	0.537	
Gender	0.01 (0.52)	0.23	0.818	Gender	0.02 (0.45)	0.62	0.533	
Academic level	0.01 (0.35)	0.35	0.730	Academic level	0.02 (0.31)	0.76	0.449	
Monthly income	0.04 (0.31)	1.24	0.217	Monthly income	0.03 (0.27)	1.05	0.293	
Marital status	-0.01 (0.29)	-0.14	0.889	Marital status	-0.02 (0.25)	-0.62	0.535	
Having health insurance	-0.02 (0.54)	-0.53	0.589	Having health insurance	0.01 (0.47)	0.13	0.900	
Having chronic status	-0.02 (0.62)	-0.52	0.601	Having chronic status	-0.02 (0.55)	-0.71	0.480	
Employment status	0.13(0.52)	3.28	0.001	Employment status	0.13(0.46)	3.82	<0.001	
-	-	-	-	Fear of Covid	-0.15(0.03)	-5.09	<0.001	
-	-	-	-	Optimism	0.39(0.02)	11.01	<0.001	
-	-	-	-	Pessimism	-0.08(0.02)	-2.16	0.031	

4. DISCUSSION

Globally, the COVID-19 pandemic negatively influenced the mental health and well-being of people all over the world. Resilience is considered an essential factor that affects the ability to cope with stressors. This study was conducted in the mid-COVID-19 pandemic and examined the resilience level and identified predictors of resilience among the Jordanian population during the COVID-19 crisis.

4.1. Resilience Level

Although most of the participants were females, well educated, and employed, the results indicated that the Jordanian population showed lower resilience levels (or no resilience at all) by this instrument (Connor-Davidson Resilience Scale). Most studies have used the 10-item Connor-Davidson Resilience Scale (CD-RISC-10) used 32 as the cut-off score for the 10-item resilience [23]. This result is vital as our study examined resilience during the pandemic. Many similar studies have also revealed a low resilience level. In a

study that included 374 adults and aimed to identify predictors of resilience toward the COVID-19 pandemic in the United States, the participants reported a mean score of 30.97 (SD = 5.46) on the 10-item scale [29]. In a Chinese study that included 3088 social media participants and examined gender differences in depression and anxiety and explored associated factors during the COVID-19 pandemic, the mean score of CD-RISC-10 was found to be 28.58 (SD ± 8.08) [30]. In another study conducted during the second and third phases of COVID-19 in Mexico including 666 participants, the mean score of CD-RISC-10 was 29.26 (SD±6.95) [31]. However, despite the seriousness of the pandemic, Chen and Bonanno (2020) suggested most individuals to likely be resilient, and it was reported to be a result of multiple factors, including exposure severity, individual differences, family context, and community characteristics [32]. However, compared to other studies, resilience levels among the Jordanian population were found to be lower. The results of the current study are alarming since COVID-19 is a global pandemic that will not end soon, and this may mean that further decreased levels of resilience may prevail among this population.

Three items were very significant in reflecting the low resilience among the Jordanian population, including the item "I try to see the comic side of the problems when I face them," "failure doesn't get me frustrated easily," and "under pressure, I can focus and think clearly." These results may be due to the fact that threats can be associated with increased levels of concern, especially in females since they constituted the majority among this study's participants [33]; the general population may have a larger danger assessment of the epidemic, compromising their personal resilience and mental well-being, especially when they lack knowledge regarding the crisis [32]. Previous possible causes may lead to negative psychological consequences of the pandemic that can have a significant impact on mental well-being and the means to deal with these impacts, as mentioned in this study, including the impact on the participants' ability to focus and have clear thinking, frustration, and lower ability to be optimistic.

#### 4.2. Predictors of Resilience

Employment status successfully indicated greater levels of resilience. Employment status remained a significant predictor of resilience after considering fear of COVID-19, optimism, and pessimism. This finding was expected as the pandemic caused most economic hardships [34]. Similar to this study's results, a descriptive cross-sectional study was carried out in Spain. It included 1176 people between the ages of 18 and 67 to describe resilience levels in a Spanish community during the COVID-19 pandemic and to examine known correlations between high resilience and socio-demographic, occupational, and academic variables. The study found employed participants to be more likely to have higher resilience than non-employed participants.

Varied work statuses result in varied income shocks for families, which have varying effects on their capacity to pay for basic living needs. Financial resilience is defined as a family's capacity to cover fundamental expenditure demands in the face of a financial emergency [35]. Following the onset of

the pandemic, the world and Jordan's economy as well shrunk quickly and significantly, making it difficult for many companies to continue without job losses. Many companies have either been permanently closed, laid off, or have furloughed their employees [35], causing many households to experience a sudden and unexpected loss of all or a portion of their work income, severely reducing their financial resilience. The study also found individuals with higher education to more likely to have high resilience and females to have lower resilience than males [36]. The current study detected no relationship between participants' gender or educational level relating to resilience.

Fear is one of the psychological aspects of the COVID-19 pandemic that has significantly impacted people's mental health worldwide [37]. In the current study, fear of COVID-19 was a significant negative predictor of resilience. Our findings were found to be in the same line with several studies; a Chinese study including 476 Chinese outbound students (*i.e.*, from different universities worldwide) [38], a Turkish study including 370 healthcare professionals [39], and a Romanian study [40] have found the fear of COVID-19 to be negatively associated with resilience. Another study that included 929 adults in Turkey found COVID-19 fear to negatively and significantly predict resilience [41]. However, another study that included 517 European college students aimed to examine the prevalence, risk, and protective factors associated with the fear of COVID-19; in this study, no significant correlation was found between the fear of COVID-19 and resilience [42]. In the current study, optimism was a positive predictor of resilience. A study that included 100 university students from different states of India examined the effect of the COVID-19 pandemic on the relationship between optimism and resilience. The study found increasing positive and optimistic thoughts to increase resilience [43]. In addition, optimism and resilience were positively related in a sample of individuals in Spain [44]. This may be explained in that optimism can increase the individual's self-efficacy to deal with specific situations; thus, it may enhance resilience levels [45]. The relationship between resilience, optimism, pessimism, and the fear of COVID-19 needs further examination as previous studies have suggested different pathways. For example, Vos, Habibović [46] suggested positive personality traits, including optimism and resilience, to be protective factors against fear of COVID-19. In addition, Satici *et al.* [13] explained the relationship differently; they suggested that fear of COVID-19 mediated the relationship between resilience, hope, and happiness.

#### 4.3. Limitations

This study has some limitations. First, all the tools utilized were self-assessment questionnaires administered *via* online surveys. Second, because the study utilized a cross-sectional design, no causal correlations between variables can be made. Future studies should use a longitudinal design to better understand the long-term effects on resilience.

#### CONCLUSION

The Jordanian population showed low levels of resilience in this study. People with higher levels of resilience were employed, optimistic and not pessimistic, and had a lower level

of fear of COVID-19. This study contributes to the body of research on resilience in a pandemic setting. The study's findings highlight the impact of the COVID-19 pandemic on the population's psychological health.

#### AUTHORS' CONTRIBUTIONS

All authors have made substantial contributions to the conception and design of the study, acquisition of data, analysis and interpretation of data, drafting of the article, and revising it critically for important intellectual content. The authors have provided their final approval on the version to be submitted, and have agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

#### LIST OF ABBREVIATIONS

<b>SARS-CoV-2</b>	= Severe acute respiratory syndrome coronavirus 2
<b>WHO</b>	= World Health Organization
<b>IRB</b>	= Institutional Review Board
<b>CD-RISC</b>	= Connor-Davidson Resilience Scale
<b>ASOP</b>	= Arabic Scale of Optimism and Pessimism

#### ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The researchers' universities' institutional review boards (IRB) authorized the study.

#### HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee, and with the 1975 Declaration of Helsinki, as revised in 2013.

#### CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

#### STANDARDS OF REPORTING

COREQ guidelines were followed.

#### AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available on request from the corresponding author [R.A]. The data are not publicly available due to privacy.

#### FUNDING

None.

#### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest to disclose.

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#### REFERENCES

- [1] Hassan SA, Sheikh FN, Jamal S, Ezeh JK, Akhtar A. Coronavirus (COVID-19): A review of clinical features, diagnosis, and treatment. *Cureus* 2020; 12(3): e7355. [http://dx.doi.org/10.7759/cureus.7355] [PMID: 32328367]
- [2] World Health Organization. WHO Coronavirus (COVID-19) Dashboard 2021 2021. Available From: <https://covid19.who.int/>
- [3] Casella M, Rajnik M, Aleem A, Dulebohn SC, Di Napoli R. Features, Evaluation, and Treatment of Coronavirus (COVID-19). In: *StatPearls Treasure Island (FL): StatPearls Publishing*. 2023 Jan 9. 2023. [PMID: 32150360]
- [4] Huang C, Wang Y, Li X, *et al*. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395(10223): 497-506. [http://dx.doi.org/10.1016/S0140-6736(20)30183-5] [PMID: 31986264]
- [5] Wang D, Hu B, Hu C, *et al*. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA* 2020; 323(11): 1061-9. [http://dx.doi.org/10.1001/jama.2020.1585] [PMID: 32031570]
- [6] Walsh F. Loss and resilience in the time of COVID-19: Meaning making, hope, and transcendence. *Fam Process* 2020; 59(3): 898-911. [http://dx.doi.org/10.1111/famp.12588] [PMID: 32678915]
- [7] Prime H, Wade M, Browne DT. Risk and resilience in family well-being during the COVID-19 pandemic. *Am Psychol* 2020; 75(5): 631-43. [http://dx.doi.org/10.1037/amp0000660] [PMID: 32437181]
- [8] Landau J. Enhancing resilience: Families and communities as agents for change. *Fam Process* 2007; 46(3): 351-65. [http://dx.doi.org/10.1111/j.1545-5300.2007.00216.x] [PMID: 17899858]
- [9] Masten AS, Motti-Stefanidi F. Multisystem resilience for children and youth in disaster: Reflections in the context of COVID-19. *Advers Resil Sci* 2020; 1(2): 95-106.
- [10] Saul J. *Collective trauma, collective healing: Promoting community resilience in the aftermath of disaster*. New York: Routledge 2013. [http://dx.doi.org/10.4324/9780203842188]
- [11] Walsh F. Traumatic loss and major disasters: Strengthening family and community resilience. *Fam Process* 2007; 46(2): 207-27. [http://dx.doi.org/10.1111/j.1545-5300.2007.00205.x] [PMID: 17593886]
- [12] Killgore WDS, Taylor EC, Cloonan SA, Dailey NS. Psychological resilience during the COVID-19 lockdown. *Psychiatry Res* 2020; 291: 113216. [http://dx.doi.org/10.1016/j.psychres.2020.113216] [PMID: 32544705]
- [13] Satici SA, Kayis AR, Satici B, Griffiths MD, Can G. Resilience, hope, and subjective happiness among the Turkish population: Fear of COVID-19 as a mediator. *Int J Ment Health Addict* 2020; 1-16. [PMID: 33293904]
- [14] Pera A. Cognitive, behavioral, and emotional disorders in populations affected by the COVID-19 outbreak. *Front Psychol* 2020; 11: 2263. [http://dx.doi.org/10.3389/fpsyg.2020.02263] [PMID: 33041902]
- [15] Broche-Pérez Y, Fernández-Fleites Z, Jiménez-Puig E, Fernández-Castillo E, Rodríguez-Martin BC. Gender and fear of COVID-19 in a Cuban population sample. *Int J Ment Health Addict* 2020; 20(1): 83-91.
- [16] Parlapani E, Holeva V, Voitsidis P, *et al*. Psychological and behavioral responses to the COVID-19 pandemic in Greece. *Front Psychiatry* 2020; 11: 821. [http://dx.doi.org/10.3389/fpsyg.2020.00821] [PMID: 32973575]
- [17] Doshi D, Karunakar P, Sukhabogi JR, Prasanna JS, Mahajan SV. Assessing coronavirus fear in Indian population using the fear of COVID-19 scale. *Int J Ment Health Addict* 2020; 19(6): 2383-391. [PMID: 32837422]
- [18] Scheier MF, Carver CS. Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychol* 1985; 4(3): 219-47.
- [19] Thompson KA, Bulls HW, Sibille KT, *et al*. Optimism and psychological resilience are beneficially associated with measures of clinical and experimental pain in adults with or at risk for knee osteoarthritis. *Clin J Pain* 2018; 34(12): 1164-72. [http://dx.doi.org/10.1097/AJP.0000000000000642]
- [20] Jovančević A, Miličević N. Optimism-pessimism, conspiracy theories and general trust as factors contributing to COVID-19 related behavior – A cross-cultural study. *Pers Individ Dif* 2020; 167: 110216. [http://dx.doi.org/10.1016/j.paid.2020.110216] [PMID: 32834280]

- [21] Gavin-Chocano Ó, García-Martínez I, Pérez-Navío E, Molero D. Resilience as a mediating variable between emotional intelligence and optimism-pessimism among university students in Spanish universities. *J Furth High Educ* 2023; 47(3): 407-20. [http://dx.doi.org/10.1080/0309877X.2022.2133994]
- [22] The Kingdom's population estimates by age groups, individual and quintile and sex. 2020.
- [23] Connor-Davidson Resilience Scale (CD-RISC) © Manual. 2020. Available From: <http://www.connordavidson-resiliencescale.com/CD-RISC%20Manual%2008-19-18.pdf>
- [24] Ahorsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: Development and initial validation. *Int J Ment Health Addict* 2020; 20(3): 1-9. [PMID: 32226353]
- [25] Abdel-Khalek A. Manual for the Arabic scale of optimism and pessimism. Alexandria, Egypt: Dar Al-Maarifa Al-Jamiiyah 1996.
- [26] Abdel-Khalek A, Lester D. Optimism and pessimism in Kuwaiti and American college students. *Int J Soc Psychiatry* 2006; 52(2): 110-26. [http://dx.doi.org/10.1177/002076400606062092] [PMID: 16615244]
- [27] Alansari BM, Kazem AM. Optimism and pessimism in Kuwaiti and Omani undergraduates. *Soc Behav Personal* 2008; 36(4): 503-18. [http://dx.doi.org/10.2224/sbp.2008.36.4.503]
- [28] Corporation IBM. IBM SPSS statistics for windows. 21st ed. Armonk, NY: IBM Corp. 2012.
- [29] Ferreira RJ, Buttell F, Cannon C. COVID-19: Immediate predictors of individual resilience. *Sustainability* 2020; 12(16): 6495. [http://dx.doi.org/10.3390/su12166495]
- [30] Hou F, Bi F, Jiao R, Luo D, Song K. Gender differences of depression and anxiety among social media users during the COVID-19 outbreak in China: a cross-sectional study. *BMC Public Health* 2020; 20(1): 1648. [http://dx.doi.org/10.1186/s12889-020-09738-7] [PMID: 33148202]
- [31] Meda-Lara RM, Muñoz-Valle JF, Juárez-Rodríguez P, Figueroa-López C, Herrero M, de Santos Ávila F, et al. Psychological responses to COVID-19 in a Mexican population: An exploratory study during second and third phases. *Psychol Health Med* 2022; 27(1): 257-64. [PMID: 33586546]
- [32] Chen S, Bonanno GA. Psychological adjustment during the global outbreak of COVID-19: A resilience perspective. *Psychol Trauma* 2020; 12(S1): S51-4. [http://dx.doi.org/10.1037/tra0000685] [PMID: 32538658]
- [33] Romero-Blanco C, Rodríguez-Almagro J, Onieva-Zafra MD, Parra-Fernández ML, Prado-Laguna MC, Hernández-Martínez A. Sleep Pattern Changes in Nursing Students during the COVID-19 Lockdown. *Int J Environ Res Public Health* 2020; 17(14): 5222. [http://dx.doi.org/10.3390/ijerph17145222] [PMID: 32698343]
- [34] The World Bank. The World Bank In Jordan 2021. Available From: <https://www.worldbank.org/en/country/jordan/overview#1>
- [35] Yao R, Zhang J. Employment status and financial resilience during the COVID-19 pandemic. *Int J Bank Market* 2023; 41(5): 992-1009. [http://dx.doi.org/10.1108/IJBM-08-2022-0371]
- [36] Román-Mata SS, Zurita-Ortega F, Puertas-Molero P, Badicu G, González-Valero G. A predictive study of resilience and its relationship with academic and work dimensions during the COVID-19 pandemic. *J Clin Med* 2020; 9(10): 3258. [http://dx.doi.org/10.3390/jcm9103258] [PMID: 33053785]
- [37] Pakpour AH, Griffiths M.D. The fear of COVID-19 and its role in preventive behaviors. *J Concurrent Disorders* 2020; 2(1): 58-63.
- [38] Chen Y, Liu Y, Zhang Y, Li Z. The effect of fear of the COVID-19 on depression among chinese outbound students studying online in china amid the COVID-19 Pandemic Period: The role of resilience and social support. *Front Psychol* 2021; 12: 750011.
- [39] Seçer İ, Ulaş S. The effect of the fear of COVID-19 on Healthcare Professionals' Psychological Adjustment Skills: Mediating role of experiential avoidance and psychological resilience. *Front Psychol* 2020; 11: 561536.
- [40] Stănculescu E. Fear of COVID-19 in Romania: Validation of the Romanian version of the fear of COVID-19 scale using graded response model analysis. *Int J Ment Health Addict* 2021; 20(2): 1-16. [PMID: 33432266]
- [41] Karataş Z, Tagay ÖJP, Differences I. The relationships between resilience of the adults affected by the covid pandemic in Turkey and Covid-19 fear, meaning in life, life satisfaction, intolerance of uncertainty and hope. *Pers Individ Dif* 2021; 172: 110592. [http://dx.doi.org/10.1016/j.paid.2020.110592]
- [42] Muyor-Rodríguez J, Caravaca-Sánchez F. COVID-19 Fear, Resilience, Social Support, Anxiety, and Suicide among College Students in Spain. *Int J Environ Res Public Health* 2021; 18(15): 8156.
- [43] Maheshwari A, Jutta MV. Study of relationship between optimism and resilience in the times of COVID-19 among university students. *Int J Indian Psychol* 2020; 8(3): 1545. [http://dx.doi.org/10.31219/osf.io/5a3gs]
- [44] Cervera-Torres S, Ruiz-Fernández S, Godbersen H, et al. Influence of resilience and optimism on distress and intention to self-isolate: Contrasting lower and higher COVID-19 illness risk samples from an extended health belief model. *Universidad Europea* 2021.
- [45] Sabourpour F, Roslan S, Ghiami Z. Mediating role of self-efficacy in the relationship between optimism, psychological well-being, and resilience among iranian students. *Front Psychol* 2021; 12(3): 675645.
- [46] Vos LM, Habibović M, Nyklíček I, Smeets T, Mertens GJPR. Optimism, mindfulness, and resilience as potential protective factors for the mental health consequences of fear of the coronavirus. *Psychiatry Res* 2021; 300: 113927. [http://dx.doi.org/10.1016/j.psychres.2021.113927]