The prediction ability of coping strategies in mental ill-health indicators among frontline workers during coronavirus pandemic

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Keywords: Coping strategies, mental ill-health indicators, fear of COVID-19, PTSD, frontline workers, coronavirus pandemic

Posted Date: March 13th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-286239/v1>

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Abstract

Background: Many frontline workers are at high risk of the infection of coronavirus and they might develop mental ill- health indicators particularly fear of coronavirus and Posttraumatic stress disorders. Literature reviews revealed that this depends on their coping strategies which are rarely discussed and investigated within Jordanian context. This study aims at investigating the prediction ability of the coping strategies in mental ill-health indicators among frontline workers during coronavirus pandemic. Participants are 408 volunteer frontline workers; 17.2% females and 82.8% males. Ages ranged between (less than 25 and over than 25) years, work place (Ministry of Health 54.5% and Civil Defense 45.5%), Major (doctors 18.6%, nurses 21.6%, paramedic 33.3%, others 26.5%). Participants are asked to fill out online self-report measures of brief coping, fear of coronavirus and Posttraumatic stress disorders.

Results: The results show that coping strategies predicted 28.8% of the variance in fear of coronavirus and 43.6% of the variance in Posttraumatic stress disorders. Moreover, there is a low level of fear of coronavirus and Posttraumatic stress disorders also there are no significant differences in the level of fear of coronavirus in favor to study variables. At the same time, there are significant differences in the level of Posttraumatic stress disorders in favor to males: but not for other study variables.

Conclusion: Mental ill-health indicators are predicted by coping strategies that frontline workers use.

Introduction:

Coronavirus COVID-19 is an abbreviation of CO which stands for corona, VI for virus, D for disease, and 19 for the year in which it was discovered (Coelho, Suttiwan, Arato & Zsido, 2020) and it has affected huge numbers of populations all over the world in different ways; i.e. nearly about 104,165,066 confirmed cases and 2,265,354 deaths in the world (<https://www.who.int/ar/emergencies/diseases/novel-coronavirus-2019>). In Jordan, a country located in the middle east, approximately 331768 confirmed cases and 4354 deaths have been reported so far (<https://corona.moh.gov.jo/ar/>). COVID-19 impacts have serious challenges that may put most developmental countries; one of them is Jordan in a critical situation due to its limited resources (Poudel & Subedi, 2020).

Coronavirus pandemic presents unique stressors especially to frontline workers, health care and Civil Defense workers (Coelho, et al., 2020; Secer, Ulas & Karaman-Ozlu, 2020). These stressors are for example: The uncertainty about the duration of the pandemic, its impact on individuals' life, lack of personal protective equipment and its potential risks to ones' own health and their relatives. Those stressors can create intense fear and other mental ill- health indicators in a short time and may last for a long time (Albott, Wozniak, McGlinch, Wall, Gold & Vinogradov, 2020; Boyraz & Legros, 2020; Xiao, Luo & Xiao, 2020).

Torales, O'Higgins, Joao Mauricio & Ventriglio (2020) found in their study that this pandemic may lead to further mental ill- health indicators such as; stress, depression denial, global fear and will influence daily life in all sectors which in turn can weaken control and coping strategies.

1.1 Coping Strategies

It has been indicated that the ability to cope with difficulties like coronavirus pandemic may affect mental ill-health indicators (Secer, et al., 2020). Shechter, et al. (2020) found that the most common source of high distress among health care workers is perceiving lack of control. Furthermore, they found that healthcare workers use empirically-supported coping behaviors but they also reported interest in additional wellness resources.

Moreover, literature reviews indicated that research on coping strategies of frontline workers during coronavirus pandemic are still limited (Heath, Sommerfield & Ungern-Sternberg, 2020).

Carmassi et al. (2020) reviewed studies related to other virus diseases outbreak concerning the risk and coping factors for PTSD among healthcare workers. The results show that some factors regarded as risk and coping factors at the same time include; exposure level, working role, years of work experience, social and work support, job organization, age, gender and coping styles. In the same line, Brooks, Amlot, Rubin & Greenberg (2018) found that there are multiple protective factors that play crucial roles in developing mental ill-health indicators those are: training, perceived competence, social support and effective coping strategy.

Coping strategies are classified into three different types; task-oriented, emotion-oriented, and avoidance-oriented strategies and they all aim to decrease stress and manage individuals' reactions to stressors and difficulties. Task-oriented strategies focus on direct solutions, i.e. action planning, problem solving, positive reappraisal correlate with adaptive psychological wellbeing, sense of control, and self-efficacy. On the other hand, emotion-oriented strategies focus on regulating emotional state (e.g., emotional disclosure, seeking social-emotional support). In the cases of lack of constructive emotional regulation; emotion-oriented strategy can take the form of increased use of negative emotions (e.g., rumination, suppression, self-blame). The third coping strategy is avoidance-oriented which is concerned about the denying or distortion of stressful situations like; self-distractions, substance use, etc. (Smith, Saklofske, Keefer & Tremblay, 2016).

Heath, et al. (2020) the results of their review study explained coping strategies among frontline workers during coronavirus pandemic which insist on individual strategies like self-care strategy and strategies that depend on organizational justice like reducing work-load of them.

Literature reviews revealed that the sense of control over the stressors or unpredictable situations such as coronavirus pandemic and the confidence in one's coping resources may increase the use of task-oriented strategies. In contrast, low perceived coping resources and feelings of powerlessness would promote greater use of emotion-oriented and avoidance-oriented strategies. But these strategies may help the individual for a short and immediate time not for a long time (Smith, et al., 2016).

1.2 Mental ill-health indicators

Frontline workers, who serve during the COVID-19 pandemic, are at high risk of developing many mental ill- health indicators particularly fear of infection of COVID-19 and posttraumatic stress disorders PTSD (Xiao, et al., 2020). Moreover, in many studies frontline workers reported having neuropsychiatric issues. Hence, there is an urgent need to investigate mental ill- health consequences among them (Kang, et al., 2020; Holmes, et al., 2020; Poudel & Subedi, 2020; Zhang, et al., 2020).

1.1.2 Fear of coronavirus

Frontline workers' duties are to identify the persons who are infected, respond to their treatment and carry out sever cases to hospitals which in turn may put them at the risk of developing fear of coronavirus in addition to the possibility of getting infected by coronavirus disease at any time (Secer, et al.,2020).

Amin (2020) conducted a study to examine the impacts of COVID-19 on health care professionals' psychological wellbeing. The results indicated the presence of corona phobia among them which in turn leads to multiple mental ill- health symptoms. Moreover, Huang., Han., Luo & Ren (2020) investigated mental health among clinical first-line medical staff and found that about 23.04% of them suffer severe anxiety in favor to female medical staff.

Fear is a defensive mechanism against dangerous situations which in its minimum degrees help us to survive and protect ourselves against threatening situations. But intense degrees of fear can lead to psychopathology. The results of limited studies show that fear of COVID-19 leads to extreme emotional and behavioral consequences like; anxiety disorders, suicide and PTSD (Secer, et al., 2020).

2.1.2 Posttraumatic stress disorders (PTSD)

Posttraumatic stress disorders PTSD is the most common mental ill- health indicator studied after the crises like coronavirus pandemic. Moreover, Shechter, et al. (2020) found that PTSD is normal and expected during traumatic events. The results of most studies that were conducted to investigate its ratio among frontline workers during coronavirus pandemic revealed that it has occurred in high rates among them (Albott, et al.,2020; Boyraz & Legros, 2020; Shah, et al., 2020; Xiao, et al.,2020; Zandifar et al., 2020).

PTSD is a common mental ill-health indicator caused by major psychological trauma like witnessing physical suffering and death related to COVID-19 pandemic and it can create a sense of threat to ones' safety manifested in sleep disturbance, intrusive memories, grief (Albott, et al., 2020; Boyraz & Legros, 2020).

The main symptoms of PTSD, as defined by the Diagnostic and Statistics of Mental Disorders, the fifth edition (DSM-5) of the American Psychiatric Association, include persistent intrusion symptoms, persistent avoidance of stimuli, negative alterations in cognition or mood, and marked alterations in arousal and reactivity, all of the above are associated with experienced traumatic event (Albott, et al.,2020).

There are many features that have the ability to influence the risk for PTSD among frontline worker such as confronting relatively large numbers of critically ill patients, high mortality rates and lack of effective treatment. Second, they work in highly stressful situations and frequently witness death and trauma (Albott, et al., 2020; Carmassi, et al., 2020).

1.3 Coping strategies and mental ill-health indicators (fear of coronavirus, PTSD)

Some studies are conducted to investigate the relationships between coping strategies and mental ill-health during coronavirus pandemic; Secer, et al., (2020) conducted a study to investigate the impact of COVID-19 on 370 healthcare professionals in Turkey on psychological adjustments skills. Results showed that the fear of COVID-19 has a negative effect on the psychological adjustment. And it is found that psychological resilience has a protective function that limits this effect. Moreover, Lotzin, et al. (2020) in their study which was conducted in Austria, Croatia, Georgia, Germany, Italy, Lithuania, Netherlands, Poland, Portugal, and Sweden to investigate the relationship between mental ill- health indicators and coping strategy. It was found that mental ill- health indicators; fear and PTSD correlate to coping strategy. Furthermore, Chew, et al. (2020) conducted a study aimed at exploring the changes in psychological responses (perceived stress, coping, PTSD) among healthcare workers. The results showed that using avoidance coping is associated with both perceived stress and PTSD. And Shechter, et al. (2020) found that healthcare workers used empirically-supported coping behaviors but they reported an interest in additional wellness resources. Also, Callus, et al. (2020) conducted a review of studies to identify the most effective stress reduction techniques for health care providers who treat patients infected with severe coronavirus (SARS, MERS COVID-19). The result showed that relaxation techniques were implemented on health care workers who take care of patients during severe coronavirus pandemics. Also, Bhat, Mir, Hussain & Shah (2020) in their study revealed that younger people, females living in urban conditions and those using maladaptive coping skills are likely to have anxiety symptoms. And, liao, Cowling, Lam, Ng & Fielding (2014) found in their study that anxiety and worry were strongly associated with coping in proactive behaviors. Moreover, Zhu, Wei, Meng & Li (2020) found that medical staff have high level of anxiety during COVID-19 and coping styles mediate the association between social support and anxiety.

1.4 Questions of the study

The current study aims at examining the prediction ability of coping strategies and mental ill-health indicators (fear of coronavirus, PTSD) among frontline workers. The study attempts to answer the following questions:

1. What are the prominent coping strategies in light of some variables (gender, work place, age and major) among frontline workers?
2. What are the levels of mental ill- health indicators (fear of coronavirus, PTSD) in light of some variables (gender, work place, age and major) among frontline workers?

3. What is the prediction ability of coping strategies on mental ill- health indicators (fear of coronavirus, PTSD) among frontline workers?

2. Material And Methods

2.1 Participants

Participants were randomly chosen during the course of this study over the period from September /2020 until the end of December/ 2020. The sample of the current study is comprised of 408 volunteer frontline workers in Jordan who are dealing with COVID cases; (Ministry of Health 54.5% and Civil Defense, 45.5%), (82.8% males, 17.2% female), The age ranged between (less than 25 and over than 25) years, Major (doctors 18.6%, nurses 21.6%, paramedic 33.3%, others 26.5%). Participants filled out three online self-report measures.

2.2 Instruments

All measures were translated and customized to Jordanian environment and their psychometric characteristics were investigated for Jordanian versions.

2.2.1 Fear of Coronavirus-19.

Fear of Coronavirus-19 is measured using the Fear of Coronavirus scale. It is widely used and has an adequate psychometric characteristic in its original version; it consists of 7 items and ($\alpha = .82$) (Ahorsu, Lin, Imani, Saffari, Griffiths & Pakpour, 2020).

For the purpose of this study; Fear of Coronavirus-19 was translated into Arabic; then it was back - translated into its original language to ensure compatibility. Then, the scale was adjusted to suit the Jordanian environment. Psychometric characteristics of the Jordanian version were investigated as follows: 10 reviewers specialized in counseling, psychometric and psychiatry provided their notes and recommendations on the Jordanian version in terms of items suitability. This version consisted of 7 items assessing fear of Coronavirus-19. Items were rated using a 5-point Likert scale ranging from 'always' "5" to 'never' "1". Items discrimination validity for the Jordanian version of Fear of Coronavirus-19 scale was calculated; items' values ranged between (.63-.81). This indicates adequate items discrimination validity. In addition, Cronbach's alpha coefficient was ($\alpha = .87$). These values are statistically significant indicating that Fear of Coronavirus-19 scale has adequate psychometric characteristics.

2.2.2 Short PTSD inventory

PTSD was measured using Short PTSD inventory. It has an adequate psychometric characteristic. Short PTSD inventory assesses items from DSM-IV PTSD clusters. The original version of the inventory included 8 symptoms (e.g., Recurrent thoughts or memories of the events) (Hansen, Anderson, Armour, Elklit, Palic & Mackrill, 2010).

For the purpose of the current study; PTSD was translated into Arabic language after receiving permission from the scale's correspondent developer. Then, it was back-translated into its original language to ensure consistency. The scale was then modified to be more appropriate to the Jordanian environment and psychometric characteristics were derived for the scale. 10 reviewers specialized in counseling, psychometric and psychiatry provided their notes and recommendations on the Jordanian version considering items suitability. The Jordanian version consisted of 8 items. The respondent had to rate how likely he/she would agree or disagree with each statement on a 5-point Likert scale ranging from 1 "Never" to 5 "Almost Always". Items Distinction semantics validity for the Jordanian version of the scale were calculated; items values ranged between (0.54- 0.88) which indicated an adequate items discrimination validity and Cronbach's coefficient alpha was ($\alpha = .85$). These values are statistically significant. Hence, PTSD has adequate psychometric characteristics.

2.2.3 Brief Cope

Coping was measured using Brief COPE scale. It has adequate psychometric characteristics; ($\alpha = .68$). The original version of the scale involved 28 statements (e.g., I've been refusing to believe that it has happened). (Carver, 1997).

For the purpose of the current study; Brief COPE scale was translated into Arabic and then it was back-translated into its original language to ensure consistency. The scale was then modified to be more appropriate to the Jordanian environment and psychometric characteristics were derived for the scale. 10 reviewers specialized in counseling, psychometric and psychiatry provided their notes and recommendations on the Jordanian version considering items suitability. Finally, the Jordanian version consisted of 28 items. The respondent has to rate how likely he/she would agree or disagree with each statement on a 5-point Likert scale ranging from 1 "Never" to 5 "Almost Always". Items Distinction semantics validity for the Jordanian version of the scale were calculated; items values ranged between (.40-.72) which indicated an adequate items discrimination validity. In addition, Cronbach's coefficient alpha was ($\alpha = .81$). These values are statistically significant. Hence, Brief COPE scale has adequate psychometric characteristics.

2.2.4 Statistical analysis

Descriptive statistic measures: means and standard deviations were calculated to determine the prominent coping strategies, the levels of fear of coronavirus, PTSD. Then liner regression (Stepwise) and the four -way ANOVA without interaction was calculated to examine the prediction ability of coping strategies to mental ill- health (fear of COVID-19 and PTSD) and the significance level was set to ($\alpha = 0.05$).

3. Results

The results show that the most prominent coping strategies are substance abuse ($M = 4.3444$, $SD = .96163$) and the lowest is venting ($M = 2.9608$, $SD = 1.04314$) as shown in (Table 1) below.

Table1. The most prominent coping strategies

		Total			Total
Self- distraction	Mean	3.0919	Behavioral disengagement	Mean	3.7512
	N	408		N	408
	Std. Deviation	1.12794		Std. Deviation	.94959
Active-coping	Mean	3.7059	Venting	Mean	2.9608
	N	408		N	408
	Std. Deviation	1.01003		Std. Deviation	1.04314
Denial	Mean	3.4449	Positive reframing	Mean	3.7194
	N	408		N	408
	Std. Deviation	1.08146		Std. Deviation	1.05397
Substance abuse	Mean	4.3444	Planning	Mean	3.8971
	N	408		N	408
	Std. Deviation	.96163		Std. Deviation	.94528
Use of emotional support	Mean	3.4130	Humor	Mean	3.7868
	N	408		N	408
	Std. Deviation	1.11629		Std. Deviation	1.03792
Use of instrumental support	Mean	3.6777	Acceptance	Mean	4.0735
	N	408		N	408
	Std. Deviation	1.05949		Std. Deviation	.83209
Religion	Mean	4.3125	Self-blame	Mean	3.2966
	N	408		N	408
	Std. Deviation	.81132		Std. Deviation	1.12882

Furthermore, to examine the significance of the differences in coping strategies due to the difference in the levels of study variables; a multiple four-way ANOVA was used as shown in (Table 2) below.

Table 2. Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.
gender	Hotelling's Trace	.080	2.219 ^b	14.000	387.000	.007
age	Hotelling's Trace	.106	2.937 ^b	14.000	387.000	.000
major	Wilks' Lambda	.680	2.811	56.000	1507.521	.000
Work place	Hotelling's Trace	.044	1.213 ^b	14.000	387.000	.263

The results show that the significance of the differences in coping strategies was due to the gender, age, major but not to workplace.

Furthermore, the results show that there are low levels of fear of coronavirus, PTSD and there are no significant differences in the level of fear of coronavirus in favor to study variables. At the same time, there is a significant difference in the level of PTSD in favor to males: ($M = 4.23$, $SD = .480$) but not for other study variables.

Moreover, the study shows that coping strategies predicted 28.8% of the variance in fear of COVID-19 as shown in (Table 3, 4) below

Table3. The results of the regression hypothesis, its multiple correlation coefficients and predictive variance for predictable variables in every predictable model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.424 ^a	.179	.177	.89790	.179	88.784	1	406	.000
2	.476 ^b	.227	.223	.87264	.047	24.849	1	405	.000
3	.504 ^c	.254	.248	.85836	.027	14.592	1	404	.000
4	.518 ^d	.268	.261	.85107	.014	7.950	1	403	.005
5	.528 ^e	.278	.269	.84620	.010	5.648	1	402	.018
6	.537 ^f	.288	.278	.84142	.010	5.579	1	401	.019

a. Predictors: (Constant), substance abuse

b. Predictors: (Constant), substance abuse, self-distraction

c. Predictors: (Constant), substance abuse, self-distraction, denial

d. Predictors: (Constant), substance abuse, self-distraction, denial, behavioral disengagement

e. Predictors: (Constant), substance abuse, self-distraction, denial, behavioral disengagement, humor.

f. Predictors: (Constant), substance abuse, self-distraction, denial, behavioral disengagement, humor, planning

Sig= .005

Table 4. Standard and nonstandard weight of predictable variables by the variable being held in predictable model

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
6	(Constant)	4.054	.330		12.268	.000
	substance abuse	-.279	.050	-.271	-5.561	.000
	self-distraction	.155	.042	.176	3.714	.000
	denial	-.130	.043	-.142	-3.012	.003
	Behavioral disengagement	-.151	.051	-.144	-2.955	.003
	humor	-.118	.042	-.123	-2.793	.005
	Planning	.115	.049	.110	2.362	.019

a. Dependent Variable: fear of COVID-19

sig= .005

It is clear that, when there are high degrees of substance abuse, denial, behavioral disengagement, humor, there are low degrees of fear of COVID-19. Also high degrees of self-distraction and planning leads to high degree of fear of COVID-19.

Furthermore, the study shows that coping strategies predicted 43.6% of the variance in PTSD as shown in (Table 5) below. Then in (Table 6) below.

Table 5. The results of the regression hypothesis and its multiple correlation coefficients and predictive variance for predictable variables in every predictable model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
	.478 ^a	.229	.227	.82301	.229	120.450	1	406	.000
	.575 ^b	.330	.327	.76778	.102	61.515	1	405	.000
	.615 ^c	.379	.374	.74057	.048	31.311	1	404	.000
	.633 ^d	.401	.395	.72828	.022	14.754	1	403	.000
	.643 ^e	.413	.406	.72161	.012	8.477	1	402	.004
	.654 ^f	.427	.419	.71354	.014	10.141	1	401	.002
	.661 ^g	.436	.426	.70890	.009	6.277	1	400	.013

Predictors: (Constant), substance abuse

Predictors: (Constant), substance abuse, self-distraction

Predictors: (Constant), substance abuse, self-distraction, behavioral disengagement

Predictors: (Constant), substance abuse, self-distraction, behavioral disengagement, self-blame.

Predictors: (Constant), substance abuse, self-distraction, behavioral disengagement, self-blame, humor.

Predictors: (Constant), substance abuse, self-distraction, behavioral disengagement, self-blame, humor, denial

Predictors: (Constant), substance abuse, self-distraction, behavioral disengagement, self-blame, humor, denial, planning

Sig= .005

Table 6. Standard and nonstandard weight of predictable variables by the variable being held in a predictable model.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
7 (Constant)	4.252	.312		13.649	.000
substance abuse	-.254	.043	-.261	-5.954	.000
self-distraction	.195	.037	.235	5.263	.000
denial	-.194	.043	-.197	-4.478	.000
Behavioral disengagement	-.101	.037	-.122	-2.708	.007
humor	-.133	.036	-.148	-3.706	.000
Planning	-.113	.036	-.131	-3.108	.002
substance abuse	.108	.043	.109	2.505	.013

a. Dependent Variable: BBBTOTAL

Sig= .005

It is obvious in table 6 that, the high degree of substance abuse, denial, behavioral disengagement, humor, self-blame lead to low degree of fear of PTSD. Also the high degree of self-distraction and planning give rise to degree of fear of PTSD.

4. Discussion

The results show that the most prominent coping strategies descending orderly are: substance abuse (ex. medical drugs, smoking), religion, acceptance, planning, humor, behavioral disengagement, positive reframing, active-coping, use of instrumental support, denial, use of emotional support, self-blame, self-distraction and venting. These result are reasonable because previous research indicated that individuals use more substance abuse (ex. medical drugs, smoking) during crises like coronavirus pandemic to regulate their emotions and decrease mental ill-health like stress and negative emotions (ex. fear of coronavirus infection), pain and depression (Madanifare, Namaei& Jafaring, 2016).

Moreover, the results revealed that the significance of the differences in coping strategies was due to gender, age, major but not to workplace. To illustrate more, females reported higher degree than males on self-distraction, active-coping, use of emotional support, venting, positive reframing, planning, humor, and are similar to males on the use of instrumental support.

Workplace didn't make any significance differences on the sort of coping strategies. This could be due to the same tasks frontline workers held on their shoulders regardless of the institute they work at. Moreover, the Jordanian government gives many facilities to all institutions and ministries particularly the ministry of health. Furthermore, the individual's personality and their demographic variables would make more significant differences like their age, gender etc.

Also, considering the ages which are classified into less than 25years and more than 25 years. The result indicated that less than 25 years reported using more active coping, use of emotional support, using of

instrumental support, humor, religion and self-blame whereas the ages more than 25 years used coping strategies like self-distraction, denial, substance abuse, behavioral disengagement, venting, positive reframing, planning and acceptance.

The results of the present study considering the major showed that descending orderly; administrative, paramedic, doctors, biological, nurses are using self- distraction. And paramedic, nurses, biological, administrative and doctors use active coping. Also, doctors, administrative, paramedic, biological and nurses use denial. Moreover, paramedic, doctors, biological, nurse and administrative use substance abuse. And, nurses, paramedic, doctors, biological and administrative use emotional support. Also, nurses, paramedic, biological, doctors and administrative use instrumental support. Moreover, doctors, biological, administrative paramedic and nurses employ behavioral disengagement. Also, paramedic, nurses, doctors, biological and administrative use venting. Furthermore, nurses, paramedic, doctors, administrative and biological use positive reframing. Also, paramedic, biological, doctors, administrative and nurses use planning. Also, nurses, administrative, doctors, paramedic and biological use humor. And, paramedic, biological, nurses, administrative and doctors are using acceptance. Also, paramedic, nurses, biological, doctors and administrative use religion. Also, nurses, paramedic, administrative, doctors and biological use self-blame.

This can be explained by; doctors are using denial more than other medical staff and most of them are more than 25 years also they use behavioral disengagement which consists with denial. Obviously, the ones who use behavioral disengagement are males their ages are more than 25 years. Moreover, doctors reported high degree in using substance abuse (ex. medical drugs, smoking) and lack of using acceptance and active coping.

These results can be illustrated in Chew, et al. (2020) study which aimed at exploring the changes in psychological responses (perceived stress, coping, PTSD) among healthcare workers. They found that using avoidance coping is associated with both perceived stress and PTSD.

Furthermore, the results revealed a moderate use of self-distraction, use of emotional support among females who are less than 25 years), in addition to the use of venting and planning comparing with others. Also, the results revealed that female nurses who are more than 25 years use positive reframing more than doctors and the other majors. And the result showed that male nurses who are less than 25 years use more self-blame than other majors. These results are in accordance with Bhat, et al. (2020) the results of their study revealed that younger people, females and those using maladaptive coping skills are likely to have anxiety symptoms.

Furthermore, the results show a low level of fear of coronavirus, PTSD and there are no significant differences in the level of fear of coronavirus in favor to study variables. At the same time, there is a significant difference in the level of PTSD in favor to males. The results are considered logical because Jordanian frontline workers are supplied with protective materials and follow the suitable protective procedures. Also, most of them isolate themselves to protect themselves and their families.

Also, Zhu, et al. (2020) found that medical staff has high level of anxiety during COVID-19 and coping styles mediate the association between social support and anxiety.

Another way of discussing this finding is through the fact that coronavirus pandemic in Jordan is still under control and there are few numbers of dangerous cases. Moreover, the results showed the prominent coping strategy is using substance abuse (ex. medical drugs, smoking) that may help them to moderate their bad feelings, in otherwise the results showed that participants respectively use religion as a coping strategy; Jordanian citizens have faith in God and most of them possesses spiritual faith of fate and destiny that may help them to lessen the pandemic effects on them. Moreover, the results of the study can be explained by, Counted, Pargament, Bechara, Joynt and Cowden (2020) who examined the role of religion as coping strategy during coronavirus pandemic. Result showed that religious coping is related to well-being this means that it decreases the fear of Covid-19.

Furthermore, the study showed that coping strategies predicted 28.8% of the variance in fear of COVID-19.

The results of the current study are in line with Secer, et al. (2020) in that there is statistically significant negative relationship between coping strategy and fear of COVID-19. And in line with Lotzin, et al. (2020) who found that mental ill- health indicators; fear and PTSD correlate to coping strategy and the result of Shechter, et al. (2020) study. Moreover, Zhu, et al. (2020) found that medical staff has high level of anxiety during COVID-19 and coping styles mediate the association between social support and anxiety.

Furthermore, the study showed that coping strategies predicted 43.6% of the variance in PTSD. The results of the current study are in line with Shechter, et al. (2020) found that healthcare workers use empirically-supported coping behaviors, and endorsed indicators of resilience, but they also reported interest in additional wellness resources. Furthermore, Chew, et al., conducted a study aimed at exploring the changes in psychological responses (perceived stress, coping, PTSD) among healthcare workers. They found that using avoidance coping is associated with both perceived stress and PTSD. Also, the review of research conducted by Shah, et al. (2020) revealed that most frontline workers face high levels of mental ill-health; fear of COVID-19 and PTSD

Many researches has discussed Coronavirus pandemic in different ways and most of them focus on its pathology and demographic effect but little is on its psychological effect, so it is recommended to give more attention to psychological impact on frontline workers (Abbas et al., 2020; Amin, 2020). And it's recommended to take into account the needs of frontline workers (Shah, et al. 2020).

5. Conclusion

Our study goes in accordance with previous findings and it recommends to conduct more studies regarding its variable among different samples.

Declarations

- **Ethical Approval and Consent to participate:** All participants agree to participate in this study. Also, this research is approved by the Directorate of general security and the ministry of health.
 - **Consent for publication:** This research doesn't contain individual person's data.
 - **Availability of supporting data:** All data generated or analysed during this study are included in this published article [and its supplementary information files].
 - **Competing interests:** the authors declare that they have no competing interests" in this section.
 - **Funding:** This research didn't receive any specific grant from funding agencies in the public or etc.
 - **Authors' contributions:** Both authors were active participants.
- **Acknowledgements:** Not applicable.

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