World Assumptions and Coping Related to Trauma as Predictors of General Mental Health and Acute Stress Symptoms Among Iranian Muslims During the COVID-19 Outbreak

Hamid Khanipour*, Mahsan Pourali†, Mojgan Atar‡, Mehdi Akbari§

The COVID-19 outbreak is a new potentially traumatic event that may have some unknown effects on mental health. The aim of this study was to examine how two theoretical frameworks related to coping with trauma, including shattered assumptions and coping with trauma, could explain mental health and acute stress symptoms among the general population during the COVID-19 outbreak. The participants included 212 Iranian Muslims who filled out the online survey. Women and people with non-fixed jobs reported more mental health deterioration and acute stress symptoms. There were no significant differences between people with or without COVID-19 in terms of mental health symptoms, experiencing acute stress symptoms, and world assumptions. Results showed that world assumption and forward-focused coping could predict mental health symptoms and acute stress symptoms beyond COVID-19 specific stress. Assumptions related to the meaningfulness of the world and trauma-focused coping were associated with a higher score in general mental health symptoms and acute stress, but assumptions related to the benevolence of the world, self-worth, and forward-focused coping were associated with lower mental health and acute stress symptoms. This could suggest that world assumptions could buffer or endanger mental health during crises such as the pandemic. In addition, it seems that forward-focus coping is effective for managing new life challenges during the COVID-19 outbreak. In contrast, the more people address the negative and catastrophic effects of COVID-19 (such as trauma-focused coping), the more

*Kharazmi University, h.khanipour@khu.ac.ir
https://orcid.org/0000-0001-7706-5951
†Kharazmi University, mahsan.pourali@gmail.com
https://orcid.org/0000-0003-2293-0180
‡Kharazmi University, mojgan.atar1990@gmail.com
https://orcid.org/0000-0001-5184-026X
§Kharazmi University, m.akbari@khu.ac.ir
https://orcid.org/0000-0001-6736-5336

Correspondence concerning this article should be addressed to Hamid Khanipour, Kharazmi University, Institute for Educational, Psychological and Social Research.

Funding: this study was funded by Vice-Chancellor for Research and Technology of Kharazmi University.

doi: 10.3998/jmmh.1889

Conflicts of interest
The authors have no conflicts of interest to disclose.

they are prone to developing mental health symptoms. This study showed that among Iranian Muslims, some world assumptions (for example, the meaningfulness of world) and some kinds of coping (for example, trauma-focused coping) were not as protective factor as in non-Muslim countries.

Keywords

COVID-19 outbreak • mental health • acute stress • world assumptions • trauma • coping

Introduction

The outbreak of Coronavirus disease COVID-19 induces a new kind of public health stress and causes some inconvenience in the daily life of people. COVID-19 has a deteriorating impact on mental health and increases the rate of different mental disorders among people all over the world (O'Connor et al., 2020; Shahriarirad, Erfani, Ranjbar, Bazrafshan & Mirahmadizadeh, 2021; Vindegaard & Benros, 2020; Wang et al., 2020(. According to studies that were conducted since the initial months after the COVID-19 outbreak (Ravens-Sieberer et al., 2021; Jahanshahi, Dinani, Madavani, Li, & Zhang, 2020; Tee et al., 2021), the rate and severity of different kinds of mental health symptoms and disorders, such as generalized anxiety disorder, major depressive disorder, acute stress disorder, and post-traumatic stress disorder have been inflated among some people in many countries. Some studies considered the COVID-19 outbreak as a global disaster and investigated its impact as a potentially traumatic event (Chen & Bonanno 2020; Vazquez et al., 2021; Lahav, 2020; Figley, 2021). The COVID-19 outbreak influences every aspect of people's life, including physical health, interpersonal relationships, economic issues, and leisure times. Therefore, the mental health burden due to COVID-19 is inevitable and expectable. One study showed that the traumatic stress of COVID-19 was higher among some Arab countries like Egypt and Iraq compared to other Arab countries (Shuwiekh et al. 2020). Furthermore, this negative impact was more severe among Iranian people based on the mortality and morbidity rate (Ghafari, Kadivar & Katzourakis, 2021). However, as previous studies in the field of stress and trauma revealed, there were individual differences among people in terms of the severity of mental health symptoms experienced after exposure to a stressor or potentially traumatic event (Mancini & Bonanno, 2010; Regehr, Hill, & Glancy, 2000; Zeidner & Ben-Zur, 1994).

It seems that cognitive factors and the ways of coping with potentially traumatic events could explain the level of experienced mental health burden due to the COVID-19 outbreak. Previous studies indicated the role of cognitive factors, such as cognitive fusion and cognitive reappraisal (Zhang et al., 2021), rumination (Bakker & Van Wingerden, 2021), intolerance of uncertainty (Reizer, Geffen, & Koslowsky, 2021), and avoidance and approach coping behaviors (Shamblaw, Rumas, & Best, 2021) in explaining mental health burden during the COVID-19 outbreak. The Shattered Assumption Model (Janoff-Bulman, 2010) and Coping with Trauma Framework (Bonanno, Pat-Horenczyk & Noll, 2011) were two of the accepted theoretical frameworks in the trauma psychology literature that have been examined in predicting mental health symptoms, especially stress-related symptoms in disasters and traumatic events (Janoff-Bulman, 1989; Dekel, Solomon, Elklit, & Ginzburg, 2004; Park, Chang, & You, 2015; Rodin et al., 2017). It seems these two theoretical frameworks have new insights for explaining mental health symptoms due to the COVID-19 outbreak (Galatzer-Levy, Burton, & Bonanno, 2012).

Shattered Assumption Theory and General Mental Health

According to Shattered Assumption Theory (Janoff-Bulman, 2010), the genesis of mental health problems after traumatic events is due to damaging the world assumptions that every person holds toward their life. World assumptions were conceptualized as core beliefs about life and self that were shaped through mental development (Janoff-Bulman, 1989). These beliefs consisted of the benevolence of the world, the meaningfulness of life, and self-worth. Potentially traumatic events may shatter these assumptions and lead to mental health problems (Janoff-Bulman, 1989). Testing this model showed that victims of traumatic events who experienced post-traumatic symptoms had more negative world assumptions regarding life and themselves compared to non-victims (Dekel et al., 2004; van Bruggen et al., 2018).

Furthermore, world assumptions could act as a cognitive vulnerability factor that not only affects an individual's coping style with traumatic events but also directly influence their mental health problems after experiencing traumatic events. Some previous studies showed the role of negative world assumptions in predicting trauma symptoms (Van Bruggen et al., 2018), sexual risk behaviors (Avants, Marcotte, Arnold, & Margolin, 2003), social anxiety among online dating users (Pitcho-Prelorentzos, Heckel, Ring, 2020), grief, depression, and post-traumatic stress symptoms (Mancini, Prati, & Bonanno, 2011).

As these world assumptions may relate to religious beliefs and both of them are related to explaining the nature and consequences of life events (Janoff-Bulman, 1989), it is interesting to know whether the world assumptions similarly predict mental health. World assumptions are defined as a strongly held set of assumptions about the world and self, which are learned by experience (Parkes, 1975). It seems religion and cultural values not only have an important role in learning these assumptions, but also, as some theories pose, these kinds of experiences could differentially affect mental health outcomes (Heine, Lehman, Markus, & Kitayama, 1999; Heine, 2001). Therefore, it could be argued that world assumptions have been associated with general mental health.

Coping with Trauma Framework and General Mental Health

In a novel and radical conceptualization about the psychology of trauma, Bonnano posits that human beings were more resilient toward trauma than has been mentioned in the scientific literature (Bonanno, 2004; Bonanno, 2005). He claimed that coping with trauma could be classified into trauma-focused and forward-focused strategies (Bonanno et al., 2011). In line with trauma psychology literature, this model advocates the role of working with traumatic memories.

It also highlights that resiliency toward trauma depends on forward-focused coping, which is characterized by maintaining routine activities and trying to adjust to ordinary life issues after potentially traumatic events (Bonanno et al., 2011). Coping flexibility is another concept that is related to ways of coping with trauma, and it is related to how people balance the use of trauma-focused and forward-focused coping strategies (Bonanno et al., 2011). Previous studies revealed the significant role of both kinds of coping with trauma and adjustment after experiencing potentially traumatic events and adjustment to bereavement (Galatzer-Levy et al., 2012; Burton et al., 2012; Rodin et al., 2017; Pinciotti, Seligowski, & Orcutt, 2017; Knowles & O'Connor, 2015). According to tenets of this framework, it could be hypothesized that forward-focused coping and coping flexibility are associated more with mental health symptoms than trauma-focused coping during the COVID-19 outbreak. The finding of a novel study during the COVID-19 outbreak also showed that forward-focus coping is a better protective factor for depression and anxiety than trauma-focused coping among older adults in the United States of America (Jordan et al., 2021). From a cultural perspective, coping with life stress may

be influenced by cultural values (Wong, Reker & Peacock, 2006). Islamic values, which invite people to be patient in a crisis and to never give up on hope or God's mercy, could be used for cognitive restructuring (Hamdan, 2008). As these values are very close to forward-focused coping, it is interesting to know whether they could lead to a specific relationship between ways of coping with trauma and mental health.

Possible Interaction Between World Assumptions and Ways of Coping with Trauma

Researchers investigated potential factors that affect resiliency toward trauma and found that some personality factors, such as optimism, hardiness, and some emotion regulation strategies, were associated with ways of coping with trauma (Bonanno, 2004.; Glatzer-Levy et al., 2012; Maccallum, Tran, & Bonanno, 2021). According to the Coping with Trauma Framework (Bonanno et al., 2011), people who use more forward-focus coping and coping flexibility were more resistant against mental health symptoms like anxiety, depression, and post-traumatic stress disorder (Rodin et al., 2017; Pinciotti et al., 2017). However, less is known about specific factors predicting forward-focus coping. It seems that world assumptions could be one of the underlying cognitive factors potentially determining forward-focused coping. Evidence supporting this idea could be derived from the Resource-Congruent Coping Model (Wong et al.,2006) and the Cognitive Appraisal-Coping Framework (Park & Folkman, 1997; Peacock, Wong, & Reker, 1993). According to these models, people appraise stressful situations based on their coping schemas (Wong et al., 2006; Park & Folkman, 1997). Previous studies provided evidence on how cognitive schemas could predict maladaptive coping with trauma and stressful events (Peacock et al., 1993). World assumptions may act like a cognitive schema that could shape ways of coping with trauma. Therefore, it could be argued that cognitive structures, such as world assumptions, could influence how people cope with potentially traumatic events like the COVID-19 outbreak. So, we expect that people who have more positive world assumptions tend to use more forward-focused coping with trauma because their functional and positive cognitive assumptions would shape better ways of coping with traumatic events.

World Assumptions, Ways of Coping with Trauma, and Acute Stress disorder

Acute Stress Reaction (ASR) that are prevalent in the initial month of any kind of trauma refer to four clusters of symptoms: dissociative, re-experiencing, avoidance, and arousal symptoms (Bryant & Harvey, 2000). Previous studies showed that experiencing a higher level of acute stress symptoms in the initial days of traumatic experiences could predict post-traumatic stress disorder (Bryant, 2010). Some mental factors such as coping strategies, resiliency, social support, or psychological needs were investigated as predictors or mediators of ASR in the first month of the COVID-19 pandemic (Ye et al., 2020; Zhou & Yao, 2020). Although research showed that people who got infected were more likely to experience acute stress symptoms, it seems that other psychological factors beyond having COVID-19 could explain the level of ASR severity among people. Shattered assumptions have been examined for predicting acute stress disorder in the context of other traumatic events (Lilly, 2008; Mikkelsen & Einarsen, 2002; Galatzer-Levy et al., 2012). In addition, there are some studies about the role of coping strategies and acute stress disorder (Taylor et al., 2009; Harvey & Bryant, 1998; Ye et al., 2020), but there were no studies about the role of trauma-focused coping and forward-focused coping in predicting ASR. Thus, we decided to examine how world assumptions and ways of coping with trauma could predict acute stress symptoms above and beyond COVID-19 specific stress. Also, by comparing the predictors of acute stress symptoms and general mental health, we could reach new insights about the specific nature of these two mental health indices.

COVID-19 and Muslim Mental Health

Iranian people have a religious culture, and so, according to some theoretical and empirical evidence (Pargament, 2011; Markus & Kitayama, 1998), it is expectable that this culture shapes the way people construct world assumptions and have an effect on ways of coping with traumatic events like the COVID-19 outbreak. In line with this claim, one study showed that positive religious coping has a higher rate among Muslims, and acts as buffering factor against depressive symptoms during the COVID-19 outbreak (Thomas, Barbato, 2020). Furthermore, another study in Iran showed that predictors of mental health and well-being were not the same among Iranian and Swedish students (Kormi-Nouri, Farahani, & Trost, 2013). According to this evidence, we could argue that world assumptions and coping with trauma during the COVID-19 outbreak among Iranian people have a distinct kind of relationship with the severity of mental health symptoms.

The Aim of the Study

The current study aimed to examine whether shattered assumptions and coping with trauma frameworks would affect the severity of mental health problems during the COVID-19 outbreak. Specifically, we want to find out whether world assumptions and ways of coping with trauma could predict mental health problems beyond the specific stress of COVID-19, such as contact with viruses, catching the disease, or other related economic and social stressors. In addition, another aim of this study was to examine the possible interaction between world assumptions and coping styles with trauma in predicting mental health symptoms during the COVID-19 outbreak.

Method and Procedure

Collecting data began one month after the start of the COVID-19 epidemic in Iran (April 8, 2020) and lasted until October 10, 2020. A total of 232 Iranian participants started the survey, and 212 completed all the questionnaires. Seventy-three were identified as male and 143 as female. All of them were Muslims from Iran, which was the exclusion criteria for entering the Google form survey. Participants ranged in age from 18 to over 60 years. Participants belonged to six groups regarding the job and educational status: unemployed, student, governmental positions and civil servant, freelance or self-employed jobs, service, and labor.

The present study was based on a correlational design. Data was collected using an online survey. The method of gathering information and data was through the Google Docs form. Invitation to participate in research was published on social networks. At the beginning of the research, participants signed informed consents that approved they participated voluntarily and with their own desire in the study. The online survey took approximately fifteen minutes to complete. Upon completion, participants were given feedback about their results. They were referred to an online page where they were informed how to maintain mental health in the COVID-19 period. In the end, telephone numbers of mental health service providers were available for participants.

Data Analysis

The data were analyzed using Pearson correlation coefficient, hierarchical multiple regression, and path analysis. For each variable, the sum score is calculated, and this score is used for testing

the hypothesis. The predictor variables include COVID-19 specific stress, world assumptions, and ways of coping with trauma. The criteria variables were the severity of general mental health and the severity of acute stress symptoms. The data were analyzed by SPSS (version 22) and AMOS software.

Measures

Effect of COVID-19 specific stress

To evaluate the effect of COVID-19 specific stress, five questions were used. Questions were related to the involvement of participants or their family members with COVID-19, loss of their loved ones, economic problems, job problems, and communication problems due to COVID-19 outbreak conditions. Participants were asked to answer yes or no questions. The total composite score of these five questions was used to assess and estimate the severity of COVID-19 specific stress. This method has been used in a previous study (Ye et al., 2020) to assess specific stresses caused by the COVID-19 outbreak.

The World Assumption Scale (WAS)

This self-report measure consists of thirty-two items and has eight sub-scales (including benevolence of the world, the benevolence of people, justice, controllability, randomness, self-worth, self-control, and luck) and is mostly used in trauma research (Janoff-Bulman, 1989). The mentioned sub-scales are combined into three major subscales: benevolence of the world, the meaningfulness of the world, and self-worth. Answers are rated from 1 (strongly disagree) to 6 (strongly agree). The factor structure, incremental validity, and internal consistency of this scale were confirmed in another study among people with post-traumatic stress symptoms (Van Bruggen et al., 2018). In the current study, the Iranian version of this scale showed good reliability for subscales, including benevolence ($\alpha = 0.84$), meaningfulness ($\alpha = 0.70$), and self-worth ($\alpha = 0.80$)

The National Stressful Events Survey Acute Stress Disorder Short Scale (NSESSS)

After an extremely stressful event, this measure can be used to assess the severity of the symptoms of acute stress disorder in adults (Kilpatrick, Resnick, & Friedman, 2013). This measure consists of seven items, and each item is rated on a 4point scale: 0 (not at all) to 4 (extremely). Higher scores reveal greater severity of acute stress disorder. The severity of acute stress could be delineated by subtracting the raw score from the items that were responded to and classified to 0 (none), 1 (mild), two (moderate), three (severe), and four (extreme) (Kilpatrick et al., 2013). This scale has been used in some studies related to investigating mental health changes during the COVID-19 outbreak and had good reliability and validity (Parker et al., 2021; Gupta, Rai, & Dang, 2020). In a current study, the internal consistency of the Iranian version of this scale was good ($\alpha = 0.85$).

Brief Symptom Inventory (BSI-18)

This is the short-form of the symptom checklist-90 that consists of eighteen items related to somatization, anxiety, and depression (Derogatis & Savitz, 2000). The items are rated on a five-point Likert scale from zero (not at all) to four (extremely). Acceptable internal consistency with Cronbach's alphas of 0.79, 084, and 0.74 for anxiety, depression, and somatization, respectively, were reported for this scale in the original study (Derogatis & Savitz, 2000). In another study,

the reliability of BSI-18 was good to very good, and the Cronbach's alpha was 0.82 for somatization, 0.87 for depression, and 0.84 for anxiety (Franke et al., 2017). In Iran, the BSI-54 has been validated among people with major depressive disorder, and its factor structure and convergent validity are compatible with the original English version of the scale (Mohammadkhani, Dobson, Amiri, & Ghafari, 2010). In addition, in this study, the internal consistency was 0.79, 0.85, and 0.81 for somatization, depression, and anxiety subscale of BSI-18.

Perceived Ability to Cope with Trauma (PACT)

The PACT is a questionnaire consisting of twenty items rated on a 7-point Likert scale. It measures styles of coping with trauma in various potentially traumatic life events (Bonanno et al., 2011). Participants were asked to rate their ability to use different **s**tyles of coping with trauma by answering questions that are rated from 1 (not true) to 7 (extremely true) (Bonanno et al., 2011). This measure consists of two independent sub-scales: forward-focused coping and trauma-focused coping. The first sub-scale is the forward-focus scale, which is related to maintaining routines of life and attempting to pursue life goals and thinking optimistically. On the other hand, trauma-focused coping strategies measure the participant's ability to think realistically, remain focused on a traumatic event, and fully experience the emotional and cognitive significance of the event (Burton et al., 2012). The factor structure of this scale is confirmed in other countries like Italy (Saita, Acquati, Fenaroli, Zuliani, & Bonanno, 2017). Internal consistency of forward-focused and trauma-focused coping was reported as 0.83 and 0.73, respectively (Bonanno et al., 2011). The Iranian form was used in the present study. Before using the scale, content validity was assessed by two mental health professionals, and the internal consistency coefficient for forward-focused and trauma-focused subscales was calculated (α = 0.92 and 0.74, respectively).

Results

Demographic Features of the Sample

The majority of the participants aged between 20–30 years (n=113, 53.3%). Other age groups were as followed: 30–40 years (n=60, 28.3%), 40–50 years (n=29, 13.7%), 50–60 years (n=8, 3.8%), above 60 years (n=2, 9%). Conducting one way analysis of variance (ANOVA) showed no significant difference between different age groups in terms of severity of depression (F=1.027, p=0.394), anxiety (1.73, 0.244), somatization (F=0.288, P=0.888), and general symptom severity (F=0.669, p=0.614). Other demographic features of the participant's general mental health is shown in Table 1.

Table 1. Severity of general mental health based on gender, marital status, and job

	M	SD	T	Sig
Gender:				
Female	35.85	11.99	2.74	0.007
Male	31.29	10.19		
Marital status:				
Single	9.57	3.377	–0.881	0.380
Married	10.02	3.99		
Job:				
Non-fixed job	35.17	11.7	1.22	0.221
Fixed job	32.90	11.4		

As Table 1 shows, there is a significant difference between males and females in the depression subscale; in other subscales and in terms of other demographic variables, the differences were not significant. Also, the severity of acute stress symptoms among females (M=10.9, SD=5.80) was significantly higher than males (M=8.78, SD=5.13, t=2.61, p=0.009). However, in other demographic features, there was no significant difference in the severity of acute stress symptoms (p>0.05). In addition, results showed that in terms of severity of acute stress symptoms, the majority of participants were in moderate level (n=85, 40.1%), 58 were in mild level (27.4%), 43 in severe level (20.3%), 3 in extreme level (1.4%), and 23 approximately never experienced acute stress symptoms (10.8%). There was no significant relationship between the severity of acute stress symptoms and having COVID-19 (contingency coefficient=0.68, p=0.911).

Among participants, 44 people reported that they got COVID-19 (20%). Comparing groups with and without a history of having COVID-19 showed no significant difference in scales related to mental health and acute stress (p>0.05).

Correlation Analysis

Composite score of COVID-19 specific stress is associated with general mental health symptoms (r=0.14, p<0.05), and severity of somatization symptoms (r=0.18, p<0.05). In Table 2, the results of zero-order correlation between other variables are shown. The results showed that mental health symptoms (r=0.19, p<0.05) and acute stress (r=0.17, p<0.05) were negatively associated with gender, indicating that females were more prone to experience higher mental health symptoms and acute stress. Furthermore, mental health symptoms (r=0.17, p<0.01) and acute stress (r=0.22, p<0.01) were positively associated with job status, indicating that participants with no job or who had a non-fixed job have experienced more mental health symptoms.

Regression Analysis for Predicting General Mental Health

Hierarchical multiple regression analysis was conducted to examine the specific role of world assumptions and ways of coping with trauma. Firstly, we assessed the effect of demographic variables in step 1, which showed no significant associations. In steps 2, 3, and 4, we tested the effect of COVID-19 specific stress, the effect of shattered assumptions, and coping with trauma framework on the general mental health. Adding the world assumptions subscales increased the explained variance to 19% (F(4,208) = 9.320, P<0.001). The results revealed that benevolence (β=-0.350, P<0.001) negatively predicted mental health symptoms, and its effect was higher than meaningfulness (β=0.173, P<0.001) and self-worth (β=- 0.213, P<0.001). Moreover, in stage four, introducing forward-focused coping (-0.0385, P<0.001) and trauma-focused coping (P=0.215) explained 10% of additional variance related to mental health symptoms (F(6,206)=11.9, P<0.001). The association between forward-focused coping with mental health symptoms was negative, whereas this association for trauma-focused coping was positive.

Regression Analysis for Predicting Acute Stress Symptoms

The result of the second hierarchical multiple regression also indicated that world assumptions (F(4,208)=5.09, P<0.001) and coping with trauma (F(6,206)=6.41, P<0.001) strategies significantly explained the severity of acute stress symptoms above and beyond COVID-19 specific stress and demographic variables. The higher score in benevolence, self-worth, and forward-focused coping was found to significantly predict lower levels of acute stress symptoms. Also, results indicated that a higher score in meaningfulness and trauma-focused coping strategies could significantly predict a higher level of acute stress symptoms.

Table 2. Pearson correlation between general mental health, COVID-19 stress, World Assumptions, and types of coping with trauma

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	-											
2. Gender	0.036	-										
3. Marital status	0.38	−0.08	-									
4. Job	−0.14	−0.15*	0.05	-								
5. COVID stress	0.12	−0.05	0.04	0.11	-							
6. Benevolence	0.18**	−0.01	0.01	0.07	0.10	-						
7. Meaningfulness	0.16*	0.09	0.16*	0.011	−0.052	0.43**	-					
8. Self-worth	0.10	0.01	0.096	−0.045	0.005	0.56**	0.49**	-				
9. TF[c]	0.06	−0.62	−0.043	0.11	0.043	−0.04	0.046	0.08	-			
10. FF[d]	0.12	−0.03	0.030	0.020	−0.042	0.45**	0.38**	0.54**	0.25**	-		
11. Mental health	−0.02	−0.19*	−0.01	0.17**	0.14*	−0.36**	−0.10	−0.33**	0.16*	−0.40**	-	
12. Acute stress	−0.03	−0.17*	0.023	0.22**	0.18**	−0.19**	−0.07	−0.22**	0.07	−0.33**	0.66**	-

Note: *. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

[a.] 1=single, b=married

[b.] 1=governmental position, 2=self-employed, 3=student, 4=service work, 5=manual worker, 6=no job

[c.] Trauma-focused

[d.] Forward-focused

Table 3. Hierarchical multiple regression analysis of COVID-19 Stress, World Assumptions, and ways of coping with trauma on the general mental health

	B	T	Beta	R^2	ΔR^2	F	Sig
Model 1							
Age	0.202	0.214	−0.016	0.062	0.062	3.40	0.83
Gender	−4.21	−2.57	−0.177				0.011
Marital status	−091	−0.52	−0.039				0.60
Job	1.41	2.22	0.153				0.27
Model 2							
Age	−0.02	−0.02	−0.02				0.97
Gender	−4.10	−2.52	−0.17	0.075	0.075	3.33	0.01
Marital status	−0.83	−0.48	−0.03				0.62
Job	1.26	1.98	0.13				0.049
COVID stress	1.33	1.70	0.11				0.089
Model 3							
Age	0.640	0.74	0.05			9.320	0.46
Gender	−4.53	−3.09	−0.19	0.269	0.194		0.002
Marital status	−0.47	−0.30	−0.20				0.76
Job	1.39	2.41	0.15				0.017
COVID stress	1.79	2.53	0.15				0.012
Benevolence	−051	−4.69	−035				0.001
Meaningfulness	0.27	2.48	0.17				0.014
Self-worth	−0.29	−2.79	−021				0.006
Model 4							
Age	0.69	0.85	0.054				0.39
Gender	−4.72	−3.44	−0198	0.373	0.104		0.001
Marital status	−0.71	−0.48	−0.30			11.97	0.62
Job	1.25	2.30	0.136				0.022
COVID stress	1.39	2.10	0.122				0.036
Benevolence	−0.351	−3.35	−0246				0.001
Meaningfulness	0.322	3.13	0.211				0.002
Self-worth	−0.140	−1.32	−0102				0.188
TF	0.322	3.60	0.215				0.001
FF	−0.335	−5.34	−0.385				0.001

Notes: $N = 212^{***}p<.001,^{**}p<.01,^{*}p<.05$ (2-tailed).

[a.] 1=single, b=married

[b.] 1=governmental position, 2=self-employed, 3=student, 4=service work, 5=manual worker, 6=no job

[c.] Trauma-focused

[d.] Forward-focused

Table 4. Hierarchical multiple regression analysis of COVID-19 stress, World Assumptions, and types of coping with trauma on acute stress symptoms

	B	T	Beta	R^2	ΔR^2	F	Sig
Model 1							
Age	−0.006	−0.097	−0.007				0.92
Gender	−0.237	−2.09	−0.143	0.069	0.069	3.81	0.037
Marital status	0.007	0.055	0.004				0.95
Job	0.126	2.86	0.197				0.005
Model 2							
Age	−0.028	−0.425	−0.031				0.67
Gender	−0.227	−2.02	−0.13	0.093	0.024	4.211	0.044
Marital status	0.014	0.115	0.008				0.90
Job	0.112	2.55	0.175				0.01
COVID stress	0.126	2.34	0.158				0.020
Model 3							
Age	−0.002	−0.026	−0.002	0.167	0.074	5.098	0.97
Gender	−0.246	−2.25	−0.148				0.025
Marital status	0.30	0.257	0.018				0.79
Job	0.116	2.69	0.180				0.008
COVID Stress	0.144	2.74	0.181				0.007
Benevolence	−0.019	−2.37	−0.193				0.019
Meaningfulness	0.012	1.48	0.114				0.141
Self-worth	−0.016	−2.02	−0.168				0.044
Model 4							
Age	0.01	0.160	0.011				0.87
Gender	−0.265	−2.52	−0.159	0.242	0.075	6.41	0.012
Marital status	0.003	0.025	0.002				0.980
Job	0.113	2.711	0.176				0.007
COVID stress	0.121	2.387	0.152				0.018
Benevolence	−0.01	−1.296	−0.105				0.196
Meaningfulness	0.015	1.96	0.146				0.051
Self-worth	−0.005	−0.616	−0.052				0.539
TF	0.013	1.880	0.123				0.062
FF	−0.021	−4.39	−0.348				0.001

Note: *. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
[a.] 1=single, b=married
[b.] 1=governmental position, 2=self-employed, 3=student, 4=service work, 5=manual worker, 6=no job
[c.] Trauma-focused
[d.] Forward-focused

Path analysis

In order to test the relationship between world assumptions, ways of coping with trauma, and severity of general mental health, we conducted a path analysis. This path model was developed utilizing a structural equation modeling procedure with maximum likelihood estimations. In the path analysis, world assumptions are considered as predictor variables and ways of coping with trauma as mediator variables. The general mental health score was also regarded as the criterion variable. In the beginning, three kinds of world assumptions and two ways of coping with trauma were conducted to predict general mental health score; however, the fitted model was not good (goodness-of-fit, χ_2=155.022 p>.05, *CFI*=.63, *SRMR*=.66, *RMSEA*=.90). The model was then adjusted, and non-significant paths were deleted. In the end, we examined the adjusted model in which only benevolence of the world and forward-focused coping were assigned as predictors of the severity of general mental health (goodness-of-fit, χ_2=97.378 p<.001, *CFI*=1, *SRMR*=.46, *RMSEA*=.268). The results of the adjusted model also were not fitted with data, and indices were not good enough. Furthermore, testing path analysis with the same variables to predict the severity of acute stress symptoms was not fitted with the data.

Discussion

We regard the COVID-19 outbreak as a one kind of possibly traumatic event and, as such, we examined the predictors of general mental health and acute stress symptoms using two theoretical models, including shattered assumption theory and coping with trauma framework among Iranian Muslims.

Demographic Factors Affecting Mental Health During COVID-19

Findings showed that women were more prone to suffer from impaired mental health, especially depression symptoms, and experience more severe acute stress symptoms than men during the COVID-19 outbreak. This finding is consistent with this general-known finding that women have higher rates of internalizing symptoms like anxiety (Rosenfield, 1999) and were more likely to report their mental health symptoms than men (World Health Organization, 2002). Increasing the rate of domestic violence and women victimization may have a role in increasing mental health symptoms and specific acute stress symptoms among women during the COVID-19 outbreak (Sediri et al., 2020; Das, Das, & Mandal, 2020). Therefore, women are more in need of mental health services during and after the COVID-19 outbreak. More interventions focused on the trauma may be needed for women to prevent further problems like post-traumatic stress disorder. Another demographic factor that was found to be significantly associated with mental health was job status. Results showed that people with no job or with a non-fixed job, like college students and manual workers, experienced more mental health symptoms during the COVID-19 outbreak. This finding is consistent with a novel study that revealed the importance of job insecurity and financial concerns as predictors of negative mental health during the COVID-19 outbreak (Wilson et al., 2020).

Mental Health and World Assumptions

Regression analysis showed that world assumptions related to the benevolence of the world and self-worth could inversely predict general mental health. Still, the association between assumptions related to the meaningfulness of the world and general mental health was positive. Our results partially supported the Shattered Assumption Theory (Janoff-Bulman, 2010). It

is consistent with some previous studies that showed some world assumptions may act as an important risk factor in explaining different reactions toward traumatic events (Gebauer, 2017; Mancini et al., 2011). According to the findings of this study, it could be suggested that people with a more positive appraisal of the benevolence of the world and their self-worth were less likely to experience general mental health symptoms like depression and anxiety. In other words, holding a positive appraisal about the benevolence of the world and positive self-worth could be regarded as a protective factor against COVID-19 mental health burdens. These cognitive factors buffer against mental health problems because they enable individuals to feel controllability over events and possibly foster better coping with life hassles during the COVID-19 outbreak. These kinds of assumptions may be partially akin to change. Increasing the sense of social cohesion during the COVID-19, which is a symbol or representation of the benevolence of the world, may help people cope in a better way with burdens related to the COVID-19 outbreak. Previous studies showed that world assumptions change after traumatic events and the shattered assumptions due to experiencing trauma (Janoff-Bulman, 2010; Lilly, 2008; Mancini et al., 2011). Nevertheless, our results did not support the main tenet of the shattered assumption model because there were no significant differences between individuals who catch this disease and those who do not. However, the findings of this study support a role of world assumptions as buffering factors against COVID-19 related stress or other potentially traumatic events.

Another finding related to world assumptions indicated that holding a strong belief about the meaningfulness of the world was a risk factor that contributed to increasing mental health problems. This finding is against the prediction of the Shattered Assumption Theory (Janoff-Bulman, 2010). However, this finding is consistent with previous studies that showed meaningfulness as a kind of world assumption can be a risk factor in some instances (Gebauer, 2017). The assumption related to the meaningfulness of the world is concerned with the controllability of life issues and represents a belief in a just world. It seems the COVID-19 outbreak is against the content of this assumption. Pandemic condition bears difficulties and burdens that are against the meaningfulness and controllability of the world. Another explanation for this finding might be related to Muslims' belief systems. It might be related to a Muslim's belief that the world does not have meaning in itself; instead, Allah gives meaning to it. So based on the finding, it may be argued that trying to find meaning or cultivating positive illusions about our ability to control what happens to us in this condition has a negative effect on people's mental health. It seems people need another assumption, such as defensive pessimism (Cantor & Norem, 1989) or accepting life events and being patient (as parts of the main religious beliefs in Islam), that may help them to protect themselves against the real effect of the pandemic.

Mental Health and Coping with Trauma Framework

Testing the second hypothesis, which was related to the trauma coping framework, showed that both ways of coping with trauma, even taking into account the role of specific stress factors caused by COVID-19, can significantly predict a part of the variance of general mental health and acute stress symptoms. Based on the results, forward-focused coping was negatively correlated with mental health and acute stress symptoms, whereas trauma-focused coping had a positive relationship. In other words, individuals who were using forward-focused coping more than trauma-focused coping showed better mental health and less experience with acute stress symptoms. This finding supports some theoretical frameworks of coping with trauma (Bonanno, 2004). This result is partially consistent with a new study that showed forward-focused coping could better predict mental health outcomes among older adults during the COVID-19 outbreak (Jordan et al., 2021).

The Drawbacks of Trauma-Focused Coping Strategies

The results of the present study showed that using trauma-focused coping has a generally negative effect on mental health status and symptoms of acute stress. This finding is partially consistent with a previous study that indicated trauma-focused coping is more effective some months after a traumatic event (Galatzer-Levy et al., 2012). Also, this result is consistent with the study showing that trauma-focused coping during the COVID-19 pandemic is positively related to depressive symptoms (Jordan et al., 2021). One reason for this finding could be that the nature of the COVID-19 outbreak is ambiguous. Addressing the traumatic experiences of this pervasive event with a high volume of negative news and ambiguity about the future is likely to complicate the adjustment. In line with this argument, a new study showed that relying on the trauma-focused intervention during a traumatic event did not have a positive effect on mental health and adjustment among nurses (Vukčević Marković, Bjekić, & Priebe, 2020). In other words, focusing on the trauma caused by COVID-19 in the current period has anti-therapeutic and anti-adaptive results. The results reported in recent years on the negative impact of trauma-focused interventions, such as critical incident stress debriefing as a general and nonspecific strategy for crisis intervention (Rose, Bisson, Churchill, & Wessely, 2002), can support the negative impact of trauma-focused coping on mental health problems. However, research evidence indicated that trauma-focused interventions like Narrative Exposure Therapy (Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004; Gwozdziewycz, & Mehl-Madrona, 2013) are likely to be effective for trauma-related disorders in the post-traumatic period. Also, as trauma-focused coping may be culture-bounded (Bentley et al., 2021), it is good to test whether Islamic trauma healing practice, like turning to Allah in *duaa* (prayer), could protect mental health during COVID-19 outbreak among Muslims.

The Benefits of Forward-Focused Coping

The positive effect of forward-focused coping on improving post-disaster performance has been confirmed in previous studies related to natural and human trauma (Galatzer-Levy et al., 2012; Burton et al., 2012; Rodin et al., 2017; Pinciotti et al., 2017). Forward-focused coping is characterized by planning for present life issues, pursuing life goals, maintaining hope, and continuing life routines. This process could increase positive affect and life satisfaction and buffer against stressful or traumatic events (Bonanno, 2005; Galatzer-Levy et al., 2012). Furthermore, this coping is associated with a sense of agency and control over ambiguous circumstances (Bonanno et al., 2011; Jordan et al., 2021), and consequently makes the process of adapting to the difficulties of the COVID-19 outbreak (such as quarantine, social distance, and lifestyle change) more bearable. Furthermore, in most previous studies, flexible coping and trauma-focused coping has a protective role and has a negative relationship with post-traumatic psychological problems (Pinciotti et al., 2017). However, in the present study, the result was the opposite. Another explanation for a positive relationship between trauma-focused coping and mental health in this study might be related to the nature of trauma-focused coping, which is based on thinking deeply and staying focused on traumatic experience and its details (Bonanno, 2004). This process may increase the distress level and negatively affect mental health factors during the experience of potentially traumatic events (Galatzer-Levy et al., 2012). Based on the evidence, lots of people while facing trauma did not feel the need to think and talk about the negative events. They reported that bottling up their emotions did not help as it made them feel weak, but they noted that using humor helped them cope, as long as the humor did not go too deep (Evans, Pistrang, & Billings, 2013). Therefore, it might be understood that people undergoing trauma might temporarily need coping methods that are not involved with taking things

too seriously. Also, it could be argued that Muslims depend more on Islamic trauma healing practices like *duaa* that foster exposure to traumatic memories, and adopting a tolerance view towards life sufferings (Bentley et al., 2021).

Some Muslim cultural values about ways of coping with life difficulties are contradicted with trauma-focused coping (for example, inviting one to focus on forgetting events, the ephemerality of life, Make *duaa* to overcome difficulties of life, seeing a purpose in suffering, and leaving matters to fate). It is another factor that might explain the positive association between the amount of trauma-focused coping and negative mental health symptoms. These Muslim cultural values may cause secular trauma-focused coping while being less effective and less functional. Of course, more studies are needed on the accuracy of this explanation.

Predicting Ways of Coping with Trauma by Using World Assumptions

As a third hypothesis, this study examined how shattered assumptions interacted with ways of coping with trauma to explain general mental health.. The result of path analysis did not support this hypothesis. This hypothesis is not based on a prior well-established theory. It is based on the general cognitive theory of coping (Wong et al., 2006; Peacock et al., 1993), which argued that cognitive factors as world assumptions could determine coping strategies. Although some indirect associations were significant (especially the indirect path between benevolence assumption and general mental health symptoms through forward-focused coping), the statistical indices of the whole model were not good enough. Non-homogeneity among participants in terms of demographic features may be one possible explanation for this finding. Another theoretical explanation may be related to the independence of world assumptions and ways of coping with trauma. The Shattered Assumption Theory postulates that trauma would change world assumptions, and negative mental health symptoms are considered due to inconsistency between world assumptions and the experience of trauma (Janoff-Bulman, 2010). Although our study showed that world assumptions could predict general mental health symptoms and acute stress symptoms beyond COVID-19 specific stress, it did not support the effects of world assumptions on coping with trauma. It seems these two theoretical models could separately predict mental health outcomes. This finding is more consistent with the Bonanno model, which is about human resiliency toward trauma and loss (Bonanno, 2004; Chen & Bonanno, 2020). In line with these studies, we could suggest that cognitive factors like the positive world assumptions would not be stable or consistent precursors of resiliency toward the COVID-19 outbreak.

Research Limitations

Although the study finds out new information about the subject, it also has some limitations that should be considered in future studies. First, due to the pandemic situation, we used a non-randomized sampling method. Therefore, participants are not from different backgrounds and are predominantly women. Thus, findings can not be generalized to all people. Second, as the COVID-19 outbreak is a new situation and has several ambiguous and undetermined aspects, the study literature is limited. The third one was about the heterogeneity of the sample group in terms of some demographic characteristics such as occupation and education. The results may not be generalizable to people who do not have university jobs or who experienced more severe changes and stresses in their lives due to the COVID-19 situation. The fourth limitation is the nature of the study. It is a cross-sectional and correlational study, and we cannot make a causative inference about the hypothesis.

Clinical Implication

According to the findings of this study, some practical clinical implications could be proposed. Firstly, addressing world assumptions is an appropriate factor for maintaining mental health burdens in times of crisis and disaster. Secondly, according to the findings of this study, it is better to foster forward-focused coping than trauma-focused coping in people who experienced non-human kinds of traumatic events like epidemic conditions. Moreover, our findings suggest that it is better to concentrate on cultivating forward-focused coping with trauma than merely challenging world assumptions.

Recommendations

Our results revealed that some of the world assumptions and forward-focused coping with trauma play a crucial role in determining mental health symptoms in the general population. It is good to test these theoretical frameworks among the clinical population to find more evidence. Based on the findings, another suggestion would be to explore how cultural factors can shape trauma-focused coping and forward-focused coping strategies during the COVID-19 pandemic. In addition, unlike previous studies, as the results of this study showed that strong belief in the meaningfulness of the world and trauma-focused coping is related to worse mental health problems, it is suggested for this study to be repeated in other cultures or during the period of stability in the world after the pandemic. In addition, the current study should be repeated on a large randomized sample to examine the generalizability of the results. Furthermore, it is good to test how believing in Islamic values could impact the shaping of world assumptions among Muslim people throughout the world. We also recommend testing the direct effect of religious beliefs in the relationship between world assumptions, ways of coping with trauma, and mental health outcomes.

References

Avants, S. K., Marcotte, D., Arnold, R., & Margolin, A. (2003). Spiritual beliefs, world assumptions, and HIV risk behavior among heroin and cocaine users. *Psychology of Addictive Behaviors, 17*(2), 159–162. https://doi.org/10.1037/0893-164X.17.2.159

Bakker, A. B., & van Wingerden, J. (2021). Rumination about COVID-19 and employee well-being: The role of playful work design. *Canadian Psychology/Psychologie canadienne, 62*(1), 73–79. https://doi.org/10.1037/cap0000262

Bentley, J. A., Feeny, N. C., Dolezal, M. L., Klein, A., Marks, L. H., Graham, B., & Zoellner, L. A. (2021). Islamic trauma healing: integrating faith and empirically supported principles in a community-based program. Cognitive and Behavioral Practice, 28(2), 167–192.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American psychologist, 59*(1), 20–28.

Bonanno, G. A. (2005). Resilience in the face of potential trauma. *Current directions in psychological science, 14*(3), 135–138. https://doi.org/10.1111/j.0963-7214.2005.00347.x

Bonanno, G. A., Papa, A., Lalande, K., Westphal, M., & Coifman, K. (2004). The importance of being flexible: The ability to both enhance and suppress emotional expression predicts long-term adjustment. *Psychological science, 15*(7), 482–487. https://doi.org/10.1111/j.0956-7976.2004.00705.x

Bonanno, G. A., Pat-Horenczyk, R., & Noll, J. (2011). Coping flexibility and trauma: The Perceived Ability to Cope With Trauma (PACT) scale. *Psychological Trauma: Theory, Research, Practice, and Policy, 3*(2), 117–129. https://doi.org/10.1037/a0020921

Bryant, R. A. (2010). Acute stress disorder as a predictor of posttraumatic stress disorder: a systematic review. *The Journal of clinical psychiatry, 72*(2), 233–239.

Bryant, R. A., & Harvey, A. (2000). *Acute stress disorder*: Washington.

Burton, C. L., Yan, O. H., Pat-Horenczyk, R., Chan, I. S., Ho, S., & Bonanno, G. A. (2012). Coping flexibility and complicated grief: A comparison of American and Chinese samples. *Depression and Anxiety, 29*(1), 16–22. https://doi.org/10.1002/da.20888

Cantor, N., & Norem, J. K. (1989). Defensive pessimism and stress and coping. *Social Cognition, 7*(2), 92–112. https://doi.org/10.1521/soco.1989.7.2.92

Chen, S., & Bonanno, G. A. (2020). Psychological adjustment during the global outbreak of COVID-19: A resilience perspective. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(S1), S51-S54. https://doi.org/10.1037/tra0000685

Das, M., Das, A., & Mandal, A. (2020). Examining the impact of lockdown (due to COVID-19) on Domestic Violence (DV): An evidences from India. *Asian journal of psychiatry, 54*, 102335.10.1016/j.ajp.2020.102335

Dekel, R., Solomon, Z., Elklit, A., & Ginzburg, K. (2004). World assumptions and combat- related posttraumatic stress disorder. *The Journal of social psychology, 144*(4), 407–420. https://doi.org/10.3200/SOCP.144.4.407-420

Derogatis, L. R., & Savitz, K. L. (2000). The SCL–90–R and Brief Symptom Inventory (BSI) in primary care.

Evans, R., Pistrang, N., & Billings, J. (2013). Police officers' experiences of supportive and unsupportive social interactions following traumatic incidents. European Journal of psychotraumatology, 4(1), 19696, 1–9. https://doi.org/10.3402/ejpt.v4i0.19696

Figley, C. R. (2021). COVID pandemic: Answering the trauma questions. *Traumatology, 27*(1), 3–5. https://doi.org/10.1037/trm0000313

Franke, G. H., Jaeger, S., Glaesmer, H., Barkmann, C., Petrowski, K., & Braehler, E. (2017). Psychometric analysis of the brief symptom inventory 18 (BSI-18) in a representative German sample. *BMC medical research methodology, 17*(1), 1–7.

Galatzer-Levy, I. R., Burton, C. L., & Bonanno, G. A. (2012). Coping flexibility, potentially traumatic life events, and resilience: A prospective study of college student adjustment. *Journal of Social and Clinical Psychology, 31*(6), 542–567. https://doi.org/10.1521/jscp.2012.31.6.542

Gebauer, M. (2017). The role of World Assumptions in the development of PTSD: Cultural differences between western and non-western respondents. University of Twente. http://purl.utwente.nl/essays/72548

Ghafari, M., Kadivar, A., & Katzourakis, A. (2021). Excess deaths associated with the Iranian COVID-19 epidemic: A province-level analysis. International Journal of Infectious Diseases, 107, 101–115. https://doi.org/10.1101/2020.12.07.20245621

Gupta, D. P., Rai, D. P., & Dang, D. K. (2020). Acute Stress Disorder, Generalized Anxiety Disorderand Major Depressive Disorder during COVID-19 Epidemic in India: Online Questionnaire-Based Cross-Sectional Survey. *Journal of Dental and Medical Sciences 19*(4), 50–59.

Gwozdziewycz, N., & Mehl-Madrona, L. (2013). Meta-analysis of the use of narrative exposure therapy for the effects of trauma among refugee populations. *The Permanente journal, 17*(1), 70–76. https://doi.org/10.7812/TPP/12-058

Hamdan, A. (2008). Cognitive restructuring: An Islamic perspective. *Journal of Muslim Mental Health, 3*(1), 99–116. https://doi.org/10.1080/15564900802035268

Harvey, A. G., & Bryant, R. A. (1998). Predictors of acute stress following mild traumatic brain injury. *Brain Injury, 12*(2), 147–154. https://doi.org/10.1080/026990598122773

Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review, 106*(4), 766–794. https://doi.org/10.1037/0033-295X.106.4.766

Heine, S.J. (2001), Self as Cultural Product: An Examination of East Asian and North American Selves. Journal of Personality, 69: 881–905. https://doi.org/10.1111/1467-6494.696168

Jahanshahi, A., Dinani, M. M., Madavani, A. N., Li, J., & Zhang, S. X. (2020). The distress of Iranian adults during the COVID-19 pandemic - More distressed than the Chinese and with different predictors. *Brain Behav Immun, 87*, 124–125. https://doi.org/10.1016/j.bbi.2020.04.081

Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition, 7*(2), 113–136. https://doi.org/10.1521/soco.1989.7.2.113

Janoff-Bulman, R. (2010). *Shattered assumptions*: Simon and Schuster.

Jordan, L. S., Woodard, J. L., Pena, G. S., Arnold-Nedimala, N. A., Won, J., Callow, D. D., & Smith, J. C. (2021). Forward-focused coping predicts better mental health outcomes in mid-to late-life during the COVID-19 pandemic. *Aging & Mental Health*, 1–9. https://doi.org/10.1080/13607863.2021.1897523

Kilpatrick, D., Resnick, H., & Friedman, M. (2013). Severity of Acute Stress Symptoms—Adult (National Stressful Events Survey Acute Stress Disorder Short Scale [NSESSS])[Measurement instrument]. In.

Knowles, L. M., & O'Connor, M.-F. (2015). Coping flexibility, forward focus and trauma focus in older widows and widowers. Bereavement Care, 34(1), 17–23. https://doi.org/10.1080/02682621.2015.1028200

Kormi-Nouri, R., Farahani, M. N., & Trost, K. (2013). The role of positive and negative affect on well-being amongst Swedish and Iranian university students. The Journal of Positive Psychology, 8(5), 435–443. https://doi.org/10.1080/17439760.2013.823511

Lahav, Y. (2020). Psychological distress related to COVID-19 – The contribution of continuous traumatic stress. *Journal of Affective Disorders, 277*, 129–137. https://doi.org/10.1016/j.jad.2020.07.141

Lilly, M. M. (2008). *Shattered assumptions, coping and religiosity in intimate partner violence survivors: a partial explanation for variation in PTSD symptoms?*

Maccallum, F., Tran, S., & Bonanno, G. A. (2021). Expressive flexibility and anxiety. *Journal of Affective Disorders, 281*, 935–940. https://doi.org/10.1016/j.jad.2020.11.028

Mancini, A. D., & Bonanno, G. A. (2010). Resilience to potential trauma: Toward a lifespan approach. In *Handbook of adult resilience*. (pp. 258–280). New York, NY, US: The Guilford Press.

Mancini, A. D., Prati, G., & Bonanno, G. A. (2011). Do shattered worldviews lead to complicated grief? Prospective and longitudinal analyses. *Journal of Social and Clinical Psychology, 30*(2), 184–215. https://doi.org/10.1521/jscp.2011.30.2.184

Markus HR, Kitayama S. The Cultural Psychology of Personality. Journal of Cross-Cultural Psychology. 1998;29(1):63–87. https://doi.org/10.1177/0022022198291004

Mikkelsen, E. G. E., & Einarsen, S. (2002). Basic assumptions and symptoms of post-traumatic stress among victims of bullying at work. European journal of work and organizational psychology, 11(1), 87–111. https://doi.org/10.1080/13594320143000861

Mohammadkhani, P., Dobson, K. S., Amiri, M., & Ghafari, F. H. (2010). Psychometric properties of the Brief Symptom Inventory in a sample of recovered Iranian depressed patients. *International journal of clinical and health psychology, 10*(3), 541–551.

Neuner, F., Schauer, M., Klaschik, C., Karunakara, U., & Elbert, T. (2004). A comparison of narrative exposure therapy, supportive counseling, and psychoeducation for treating posttraumatic stress disorder in an african refugee settlement. *Journal of consulting and clinical psychology, 72*(4), 579–587.

O'Connor, R., Wetherall, K., Cleare, S., McClelland, H., Melson, A., Niedzwiedz, C., . . . Robb, K. (2021). Mental health and well-being during the COVID-19 pandemic: Longitudinal analyses of adults in the UK COVID-19 Mental Health & Wellbeing study. The British Journal of Psychiatry, 218(6), 326–333. https://doi.org/10.1192/bjp.2020.212

Pargament, K. I. (2011). Religion and coping: The current state of knowledge. In S. Folkman (Ed.), The Oxford handbook of stress, health, and coping (pp. 269–288). Oxford University Press.

Park, C. L., & Folkman, S. (1997). Meaning in the context of stress and coping. *Review of general psychology, 1*(2), 115–144. https://doi.org/10.1037/1089-2680.1.2.115

Park, M., Chang, E. R., & You, S. (2015). Protective role of coping flexibility in PTSD and depressive symptoms following trauma. *Personality and Individual Differences, 82*, 102–106.

Parker, C., Shalev, D., Hsu, I., Shenoy, A., Cheung, S., Nash, S., . . . Shapiro, P. A. (2021). Depression, Anxiety, and Acute Stress Disorder Among Patients Hospitalized With COVID-19: A Prospective Cohort Study. *Journal of the Academy of Consultation-Liaison Psychiatry, 62*(2), 211–219. https://doi.org/10.1016/j.psym.2020.10.001

Parkes, C. M. (1975). What becomes of redundant world models? A contribution to the study of adaptation to change. British Journal of Medical Psychology, 48(2), 131–137.

Peacock, E. J., Wong, P. T. P., & Reker, G. T. (1993). Relations between appraisals and coping schemas: Support for the congruence model. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement, 25*(1), 64–80. https://doi.org/10.1037/h0078787

Pinciotti, C. M., Seligowski, A. V., & Orcutt, H. K. (2017). Psychometric properties of the PACT Scale and relations with symptoms of PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy, 9*(3), 362–369. https://doi.org/10.1037/tra0000206

Pitcho-Prelorentzos, S., Heckel, C., & Ring, L. (2020). Predictors of social anxiety among online dating users. *Computers in Human Behavior*, 110, 1–8. https://doi.org/10.1016/j.chb.2020.106381

Ravens-Sieberer, U., Kaman, A., Erhart, M., Devine, J., Schlack, R., & Otto, C. (2021). Impact of the COVID-19 pandemic on quality of life and mental health in children and adolescents in Germany. *European Child & Adolescent Psychiatry*, 1–11.

Reizer, A., Geffen, L., & Koslowsky, M. (2021). Life under the COVID-19 lockdown: On the relationship between intolerance of uncertainty and psychological distress. *Psychological Trau*ma: Theory, Research, Practice, and Policy, No Pagination Specified-No Pagination Specified. https://doi.org/10.1037/tra0001012

Rodin, R., Bonanno, G. A., Knuckey, S., Satterthwaite, M. L., Hart, R., Joscelyne, A., Bryant, R.A., Brown, A. D. (2017). Coping flexibility predicts post-traumatic stress disorder and depression in human rights advocates. *International Journal of Mental Health, 46*(4), 327–338. https://doi.org/10.1080/00207411.2017.1345047

Rose, S. C., Bisson, J., Churchill, R., & Wessely, S. (2002). Psychological debriefing for preventing post-traumatic stress disorder (PTSD). *Cochrane database of systematic reviews*(2).1–10. https://dx.doi.org/10.1002%2F14651858.CD000560

Rosenfield, S. (1999). Gender and mental health: Do women have more psychopathology, men more, or both the same (and why)? In *A handbook for the study of mental health: Social contexts, theories, and systems*. (pp. 348–360). New York, NY, US: Cambridge University Press.

Saita, E., Acquati, C., Fenaroli, V., Zuliani, C., & Bonanno, G. A. (2017). A confirmatory factor analysis of the Perceived Ability to Cope with Trauma (PACT) scale. *TPM: Testing, Psychometrics, Methodology in Applied Psychology, 24*(2), 255–268.

Sediri, S., Zgueb, Y., Ouanes, S., Ouali, U., Bourgou, S., Jomli, R., & Nacef, F. (2020). Women's mental health: acute impact of COVID-19 pandemic on domestic violence. *Archives of women's mental health*, 23(6), 749–756.

Shahriarirad, R., Erfani, A., Ranjbar, K., Bazrafshan, A., & Mirahmadizadeh, A. (2021). The mental health impact of COVID-19 outbreak: a Nationwide Survey in Iran. *International Journal of Mental Health Systems, 15*(1), 1–13. https://dx.doi.org/10.1186/s13033-021-00445-3

Shamblaw, A. L., Rumas, R. L., & Best, M. W. (2021). Coping during the COVID-19 pandemic: Relations with mental health and quality of life. *Canadian Psychology/Psychologie canadienne, 62*(1), 92–100. https://dx.doi.org/10.1037/cap0000263

Shuwiekh, H., Kira, I. A., Sous, M., Ashby, J. S., Alhuwailah, A., Baali, S., Azdaou, C., Oliemat, E. M., & Jamil, H. J. (2020). The differential mental health impact of COVID-19 in Arab countries. Current psychology (New Brunswick, N.J.), 1–15.

Taylor, M. K., Mujica-Parodi, L. R., Padilla, G. A., Markham, A. E., Potterat, E. G., Momen, N., . . . Larson, G. E. (2009). Behavioral predictors of acute stress symptoms during intense military training. *J Trauma Stress, 22*(3), 212–217. https://dx.doi.org/10.1002/jts.20413

Tee, M., Wang, C., Tee, C., Pan, R., Reyes, P. W., Wan, X., . . . Ho, R. (2021). Impact of the COVID-19 Pandemic on Physical and Mental Health in Lower and Upper Middle-Income Asian Countries: A Comparison Between the Philippines and China. *Frontiers in Psychiatry, 11*(1631). https://dx.doi.org/10.3389/fpsyt.2020.568929

Thomas, J., & Barbato, M. (2020). Positive Religious Coping and Mental Health among Christians and Muslims in Response to the COVID-19 Pandemic. *Religions*, 11(10), 498. MDPI AG. Retrieved from http://dx.doi.org/10.3390/rel11100498

Van Bruggen, V., ten Klooster, P. M., van der Aa, N., Smith, A. J. M., Westerhof, G. J., & Glas, G. (2018). Structural Validity of the World Assumption Scale. *Journal of Traumatic Stress, 31*(6), 816–825. https://doi.org/10.1002/jts.22348

Vazquez, C., Valiente, C., García, F. E., Contreras, A., Peinado, V., Trucharte, A., & Bentall, R. P. (2021). Post-Traumatic Growth and Stress-Related Responses During the COVID-19 Pandemic in a National Representative Sample: The Role of Positive Core Beliefs About the World and Others. *Journal of Happiness Studies*. 1–21. https://dx.doi.org/10.1007/s10902-020-00352-3

Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, behavior, and immunity, 89*, 531–542. Retrieved from. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7260522/pdf/main.pdf

Vukčević Marković, M., Bjekić, J., & Priebe, S. (2020). Effectiveness of Expressive Writing in the Reduction of Psychological Distress During the COVID-19 Pandemic: A Randomized Controlled Trial. *Front Psychol, 11*, 2936. https://dx.doi.org/10.3389/fpsyg.2020.587282

Wang, X., Hegde, S., Son, C., Keller, B., Smith, A., & Sasangohar, F. (2020). Investigating Mental Health of US College Students During the COVID-19 Pandemic: Cross-Sectional Survey Study. *Journal of medical Internet research, 22*(9), e22817. https://dx.doi.org/10.2196/22817

Wilson, J. M., Lee, J., Fitzgerald, H. N., Osterhoff, B., Sevi, B., & Shook, N. J. (2020). Job insecurity and financial concern during the COVID-19 pandemic are associated with worse mental health. *Journal of occupational and environmental medicine*, 62(9), 686–691. https://dx.doi.org/10.1097/JOM.0000000000001962

Wong P.T.P., Reker G.T., Peacock E.J. (2006) A Resource-Congruence Model of Coping and the Development of the Coping Schemas Inventory. In: Wong P.T.P., Wong L.C.J. (eds) Handbook of Multicultural Perspectives on Stress and Coping. International and Cultural Psychology. Springer, Boston, MA. https://doi.org/10.1007/0-387-26238-5_11

World Health Organization. (2002). Gender and mental health. World Health Organization. https://apps.who.int/iris/handle/10665/68884.

Ye, Z., Yang, X., Zeng, C., Wang, Y., Shen, Z., Li, X., & Lin, D. (2020). Resilience, social support, and coping as mediators between COVID-19-related stressful experiences and acute stress disorder among college students in China. *Applied Psychology: Health and Well-Being, 12*(4), 1074–1094. https://doi.org/10.1111/aphw.12211

Zeidner, M., & Ben-Zur, H. (1994). Individual differences in anxiety, coping, and post-traumatic stress in the aftermath of the Persian Gulf War. *Personality and Individual Differences, 16*(3), 459–476. https://doi.org/10.1016/0191-8869 (94)90072–8

Zhang, C.-Q., Zhang, R., Lu, Y., Liu, H., Kong, S., Baker, J. S., & Zhang, H. (2021). Occupational stressors, mental health, and sleep difficulty among nurses during the COVID-19 pandemic: The mediating roles of cognitive fusion and cognitive reappraisal. *Journal of Contextual Behavioral Science, 19*, 64–71. https://doi.org/10.1016/j.jcbs.2020.12.004

Zhou, X., & Yao, B. (2020). Social support and acute stress symptoms (ASSs) during the COVID-19 outbreak: deciphering the roles of psychological needs and sense of control. *European Journal of Psychotraumatology, 11*(1), 1779494.. https://doi.org/10.1080/20008198.2020.1779494