Comparison of COVID-19 Anxiety, Health Anxiety, and Cognitive Emotion Regulation Strategies in Militaries and Civilians during COVID-19 Outbreaks

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ABSTRACT

Aims During the outbreak of COVID-19, the Militaries are still fighting against the virus alongside health care workers, so knowing the mental status of the military leads to identify their real needs and increase the performance of militaries. Therefore, the present study aimed to compare COVID-19 anxiety, health anxiety, and cognitive emotion regulation strategies between militaries and civilians during the outbreak of COVID-19.

Instrument & Methods This descriptive-analytical and cross-sectional study was conducted on military and civilian men living in Malayer, Hamedan, on September 1-6, 2020, coinciding with the prevalence of COVID-19. The researcher-made demographic information questionnaire, COVID-19 anxiety, health anxiety questionnaires, and cognitive emotion regulation strategies were completed by 204 people (102 militaries, 102 civilians). In order to prevent the spread of COVID-19, the convenience sampling method and internet implementation were used. Data were analyzed by descriptive statistics, independent t-test, and chi-square using SPSS 24 software.

Findings The results showed that civilians had a longer history of infection to Covid-19 and history of Covid-19 in their relatives than militaries and there was no significant difference between militaries and civilians in terms of having suspicious symptoms and history of close contact with individuals with Covid-19 disease (p>0.05). Also, there was a significant and strong relationship between the job and COVID-19 anxiety ($\chi2=90.7$; p=0.0001) and type of job and health anxiety ($\chi2=79.4$; p=0.0001), and the militaries in term of COVID-19 and health anxiety were in a more inappropriate state. About half of the militaries (41.2%) had severe COVID-19 anxiety, and one-third of them (31.4%) had severe health anxiety. The militaries had a lower average than civilians in all aspects of adaptive and maladaptive cognitive emotion regulation strategies (p<0.05).

Conclusion The level of health anxiety and anxiety of COVID-19 in the militaries is higher than in the normal population.

Keywords Health Anxiety; Emotion Regulation Strategies; Military; Reliability; Civilian; COVID-19

CITATION LINKS

[1] Psychological impacts of Covid-19 outbreak on ... [2] Psychological effects of COVID-19 on hospital ... [3] The psychological impact of quarantine ... [4] The psychological impact of the COVID-19 ... [5] Health anxiety during viral contagious ... [6] The role of emotion regulation ... [7] Emotion regulation mediates the ... [8] Emotion regulation as the mediator of ... [9] Emotion regulation strategies in cognitive ... [10] CERQ: Manual for the use of the cognitive ... [11] Unpacking cognitive emotion regulation in ... [12] Preliminary validation of the corona disease ... [13] The health anxiety inventory: Development ... [14] Psychometric properties of health anxiety ... [15] Cognitive emotion regulation questionnaire ... [16] Psychometric properties of the cognitive ... [17] An investigation of the prevalence of depressive ... [18] Health indicators for military, veteran ... [19] Trends in suicidal behaviour and use of ... [20] The role of military and police forces in ... [21] Emotion regulation in workgroups: The roles ... [22] Emotional labour demands, wages and gender ... [23] Emotional labor demands and ... [24] Masculinities and emotional expression ... [25] Stigmatisation, perceived barriers to care, help ... [26] Effect of educational program based on self-efficacy ... [27] Yoga exercise and anxiety among female students ... [28] Effectiveness of school-based mindfulness training ...

Introduction

At the end of December 2019, the spread of a new and unknown viral infectious disease was reported in Wuhan, China. The disease caused by this virus was officially registered by the World Health Organization (WHO) as COVID-19. The disease has spread rapidly worldwide and has become a serious threat to all humans [1]. Given that the inherent function of anxiety is to protect people against life-threatening factors and diseases such as the COVID-19, the presence of anxiety symptoms, especially health anxiety and fear of disease among different people in society, is certainly undeniable [2-4]. A degree of health anxiety associated with the COVID-19 pandemic, given the current situation, does not seem to be too terrible. Because it leads to preventive behaviors, but when the level of health anxiety of people in the community is out of usual mode and when the rate increases and decreases from the desired level, it can cause problems for people in the community in a different way. People with health anxiety who have much higher anxiety than the normal limit consider any altered physical symptoms as a sign of a viral illness and, therefore, increase their health anxiety and worry. If people in the community have lower levels of health anxiety than the desired level, in these circumstances, people have a very small percentage of the risk of disease, and certainly, the social behaviors of these people will be less controlled [5]. Therefore, it is very important to regulate the optimal level of anxiety in the COVID-19 pandemic in the community.

Literature review suggests that emotion regulation plays a role in mediating anxiety levels [6-8]. Emotion regulation involves conscious or unconscious cognitive, emotional, and behavioral strategies that maintain, increase or decrease emotion [9]. Cognitive regulation of emotion refers to the way people think after a negative experience or traumatic event [10]. Therefore, based on the above, the existence of a relationship between emotion regulation strategies, especially emotion regulation through cognitions (cognitive emotion regulation) and anxiety, seems logical. Cognitive emotion regulation strategies are generally divided into adaptive and maladaptive strategies. Adaptive strategies include acceptance, refocus on planning, putting into perspective, positive reappraisal that leads to improved self-esteem, social competencies, and so on. In contrast, maladaptive strategies include self-blame, blaming others, rumination, and catastrophizing, leading to anxiety and other psychological pathologies [11].

Intervening to regulate the level of health-related anxiety in individuals optimally, their current emotion regulation strategies should be examined. One of the levels of society in which the prevalence of anxiety and emotion regulation strategies is important in the outbreak of COVID-19 is the military. These assessments help mental health workers to design and implement training programs that meet their real needs. This study aimed to compare COVID-19 anxiety, health anxiety, and cognitive emotion regulation strategies in militaries and civilians during the COVID-19 outbreak.

Instrument & Methods

This descriptive-analytical and cross-sectional study was conducted on military and civilian men living in Malayer, Hamedan, on September 1-6, 2020, coinciding with the prevalence of COVID-19. G*power software determined two hundred four people considering Alfa=0.05, Beta=0.8, and effect size=0.5, and due to the possible drop out of participants. Since the need to reduce social contact to prevent the spread of COVID-19, the convenience sampling method and internet implementation were used. The link of questionnaires was distributed among the military in the form of snowball sampling by a person who works in one of the military barracks, Civilians also answered the questionnaires of the present study voluntarily and by convenience sampling. It should be noted that in the questionnaires, a question was assigned to determine the type of occupation of individuals (military/civilian). Data that incomplete the questionnaire were excluded.

Questionnaires that used were include

COVID-19 anxiety questionnaire: This test was created by Alipour *et al*. [12]. It has 18 questions and is scored based on a four-point Likert scale (0=never to 3=always), and the instrument score is calculated with the total score of the items. A higher score indicates a higher level of COVID-19 anxiety. Scores 0 to 16 measure anxiety or mild anxiety scores, 17 to 29 moderate anxieties, and scores 30 to 54 severe anxieties. The instrument's construct validity was confirmed by factor analysis, and its reliability was reported by Cronbach's alpha method of 0.91. In this study, the reliability of COVID-19 anxiety was calculated 0.89 by Cronbach's alpha method.

Health anxiety questionnaire (F-SHAI): This test was developed by Salcokis *et al*. [13]. It has 18 questions and includes three components of general health concern (Items 2, 4, 6, 8, 9, 11, 12), disease (Items 15, 16, 17, 18), and the consequences of the disease (Items 1, 3, 5, 7, 10, 13, 14) and measures health-related anxiety based on Likert's four-choice spectrum (0=never to 3=more often). To obtain health anxiety, the total score of all items is added, and to obtain the score of each factor, the scores related to each factor are added together. In CHoobforoushzadeh *et al*.'s research [14], the validity and reliability of this questionnaire have been reported as acceptable. In the present study, a Cronbach's alpha reliability of 0.85 was obtained. The cut-off point of the above scale was reported by Salkovkis *et al*. [13]. According to the researchers ' search, the cutting point of this tool was not found in

the Iranian population. In the present study, to classify people according to health anxiety, Salkovis research [13] has been mentioned.

Cognitive Emotion Regulation Strategies (CERQ): It was developed by Garnowski & Kraj [15]. The short form of this questionnaire has 18 items and is composed of 9 subscales. These subscales include maladaptive strategies including Self-blame, rumination, catastrophizing, blaming others, and adaptive strategies including acceptance, positive refocusing, refocuses on planning, positive reappraisal, putting into perspective. The scale scores range from 1 (never) to 5 (always). Each subscale consists of 2 items. The minimum and maximum scores in each subscale are 2 and 10, respectively, and a higher score indicates more use of that cognitive strategy.

Moreover, the total score of each subscale is obtained by summing the scores of the items. From the sum of subscales related to the adaptive dimension divided by 10 (number of items), the score of adaptive strategies is obtained, and from the sum of subscales of the maladaptive dimension divided by 8 (number of items), the score of maladaptive strategies is obtained. The Persian version of the Cognitive Emotion Regulation Questionnaire in Iran was validated by Besharat & Bazzazian [16], and psychometric properties of this form, including internal consistency, retest reliability, content validity, convergent validity, and optimal diagnostic, have been reported. Besharat & Bazzazian [16] also reported Cronbach's alpha coefficients for subscales from 0.67 to 0.89 in a preliminary study of psychometric properties of this questionnaire in a sample of the general population. In the present study, the reliability of the Cronbach's alpha method was 0.97 for the adaptive strategies dimension and 0.95 for the maladaptive strategies dimension.

Demographic Information Questionnaire: This questionnaire developed by the researcher and has eight questions in two demographic sections (age, educational status, marital status, history of drug or alcohol use) and history of exposure to COVID-19 virus (history of COVID-19, having suspicious symptoms, history of close contact with patient and history of disease in relatives (yes/no) This questionnaire was aimed to assess demographic characteristics and history of contact with COVID-19 virus in the research sample.

The present study results from a research project approved on May 2, 2020, at Baqiyatallah University of Medical Sciences (BUMS). Questionnaires links were made available to users online on social networks.

An independent t-test was used to compare emotion regulation strategies between military and civilians. The chi-square test was used to compare the frequency distribution of demographic variables based on job type and investigate the relationship between job type (military and civilian) and COVID-19 anxiety. Data were analyzed using SPSS 24 software.

Findings

Two hundred four people (102 military men and 102 civilian men) participated in this study. The results showed that there was a significant difference between job type and age, marriage, and history of drug or alcohol use ($p<0.05$). 50% of participants were over 30 years old. Most of the participants were married (83.8%) and had a bachelor's degree (63.6%). 18.1% of them reported a history of drug or alcohol use (Table 1).

Table 1) Results of Chi-square test for comparison of the frequency of demographic variables by job type

Variables	Militaries N (%)	Civilians N (%)	χ2	p-value
Age				
Less than 30	26 (12.7)	43 (37.3)	6.32	0.01
30 and more	76 (21.2)	59 (28.9)		
Marital status				
Single	5 (2.5)	28 (13.7)	19.12	0.001
Married	97 (47.5)	74 (36.3)		
Education				
Under high school	0	2 (1)		
Diploma	6 (1.9)	28 (4.8)		
Associate degree	25 (11.9)	24 11.4)	20.23	0.6
Bachelor	74 (35.2)	52 (28.4)		
Master and higher	2 (1)	18 (8.6)		
History of drug use or alcohol	8 (3.9)	29 (14.2)	14.5	0.0001

In the present study, 0.4% of militaries and 10.6% of civilians had a history of Covid-19. 13.2% of militaries and 16.2% of civilians had a history of suspected symptoms of Covid-19, 9.8% of militaries and 18.6% of civilians had a history of Covid-19 in their relatives, and 9.8 % of the militaries and 15.7% of civilian had a history of close contact with people with Covid-19. There were significant differences between the militaries and civilians in terms of a history of infection to Covid-19 and history of Covid-19 in their relatives. The civilians had a long history of infection to Covid-19 and history of Covid-19 in their relatives than militaries. There was no significant difference between militaries and civilians in terms of having suspicious symptoms and a history of close contact with individuals with Covid-19disease ($p>0.05$; Table 2).

Table 2) Results of Chi-square test for comparison of the frequency of contact history with COVID-19 by job type

Variables	Militaries N (%)	Civilians N (%)	χ2	p-value
History of infection to COVID-19	8 (0.4)	21 (10.6)	6.98	0.008
History of suspected symptoms of COVID-19	27 (13.2)	33 (16.2)	0.85	0.35
History of close contact with COVID-19 patient	20 (9.8)	32 (15.7)	3.71	0.05
History of infection of relatives close to COVID-19	20 (9.8)	38 (18.6)	7.80	0.005

There was a relationship between job type and COVID-19 anxiety (p<0.05), and the phi correlation coefficient (φ) showed a strong relationship (p=0.000; φ=0.67). 41.2% of the militaries and 7.8% of the civilians had severe COVID-19 anxiety. The intense anxiety of COVID-19 was more prevalent in the militaries. There was a significant relationship between job type and health anxiety (p<0.05), and this relationship was strong (p=0.000; φ=0.62). 31.4% of the militaries and 2% of the civilians had severe health anxiety (Table 3).

Table 3) Results of Chi-square test for the relationship between job type with COVID-19 anxiety and health anxiety

Subscales	Militaries N (%)	Civilians N (%)	χ2
COVID-19 anxiety			
Severe	84 (41.2)	16 (7.8)	90.7
Mild to moderate	18 (8.8)	86 (42.2)	
Health anxiety			
Severe	64 (31.4)	4 (2)	79.4
Mild to moderate	38 (18.6)	98 (48)	

There was a significant difference between military and civilian groups in all dimensions of cognitive emotion regulation strategies (p<0.05). The militaries used five dimensions of adaptive strategies and four dimensions of maladaptive strategies in less than the civilians (Table 4).

Table 4) Comparison of mean±SD of indicators of emotion regulation strategies in militaries and civilians groups (p<0.000)

Subscales	Militaries	Civilians
Maladaptive Strategies	1.95±0.87	3.58±0.61
Self-blame	3.81±2.03	7.01±1.40
Rumination	4.04±2.07	7.03±1.47
Catastrophizing	3.83±1.78	7.33±1.35
Blaming others	3.97±1.95	7.31±1.43
Adaptive strategies	1.97±0.90	3.59±0.64
Acceptance	7±1.45	3.98±1.96
Refocus on Planning	7.15±1.57	3.92±2.02
Positive Reappraisal	7.9±1.47	4.05±1.95
Putting into Perspective	7.42±1.43	3.89±2.05
Positive Refocusing	7.24±1.43	3.92±191

Discussion

The present study results showed that the type of job (military or civilian) had a strong relationship with COVID-19 anxiety and health anxiety of the participants in the study, and the militaries had a more unfavorable state in COVID-19 anxiety and health anxiety than civilians. This result is consistent with those studies showing that mental health is lower in militaries than civilians [17-19]. From a psychological standpoint, in explaining this finding, it can be mention that the military's due to different lifestyles and readiness to serve the people in critical situations, are heavier responsibility than civilians. During the outbreak of COVID-19, the military was responsible for creating social distance and maintaining quarantine, disinfecting city streets, establishing field hospitals, producing masks and disinfectants. Naturally, in quarantine and closure of most businesses, they fought against COVID-19 alongside health care workers. As a result, they interact with people who may have no clinical manifestations and are only vectors of COVID-19, so the risk of afflicting the military seems to be no less than health care workers. Infection with COVID-19 in militaries while serving [20] is a piece of evidence for this claim. Therefore, the possibility of developing COVID-19 anxiety and health anxiety in them is not far from the mind. However, it should not be missed that this result, in terms of comparability, does not mean the absence or low level of COVID-19 anxiety and health anxiety in the civilians, and it seems to answer this question; further research is needed.

All in all, the present study showed that the military personnel uses adaptive emotion regulation strategies (acceptance, refocus on planning, putting into perspective, positive reappraisal) and maladaptive emotion regulation strategies (catastrophizing, self-blame, blaming others, and rumination) less than civilians. Although no study was found to compare emotion regulation strategies between militaries and civilians, this finding was indirectly consistent with studies that showed a positive relationship between job type and emotion regulation strategies [21-23] is a possible explanation of this finding, Consistent with McAllister et al. [24] and Jones et al. [25], we can refer to the culture of the military; in other words, there are more limitations in term of expressing emotions and internal states in the military environment than civilians environments, some emotions may even be inappropriate [24], so the militaries may limit learning how to regulate self-emotional emotions. Therefore, the fact that the military uses less maladaptive strategies cannot be a reason to regulate their emotions better; as mentioned, the military also used less adaptive strategies to regulate emotion, and about half of the military participants in the present study (41.2%) had severe COVID-19 anxiety and one-third of them (31.4) had severe health anxiety. Physiologically, excessive anxiety weakens the immune system against viral illness as well as people with high levels of health anxiety may engage in some irrational and antisocial behaviors related to the COVID-19 health instructions, and a strong association between being military and COVID-19 anxiety ad health anxiety was observed, therefore need to train adaptive emotion regulation strategies is increasingly felt more than ever in the military population in the present study. Various studies have emphasized the role of psychoeducation in the prevention of severe anxiety [26, 27], For example, studies were conducted by Mostafazadeh et al. [28] and Shahyad & Mohammady [1] have shown that training cognitive-behavioral and mindfulness therapy techniques are effective in reinforcing adaptive emotion strategies.

Therefore, it is suggested that due to the current situation of the outbreak of COVID-19 and the need for social distancing, the necessary training be done

to strengthen adaptive strategies to regulate emotion and reduce maladaptive strategies in the military group through the Internet and online media. One of the study's limitations was the lack of access to sufficient female militaries to participate in the study. It is suggested that future studies consider the women's community. Also, the present study population was in Malayer, Hamedan province, that it is difficult to generalize the results to other cities due to different prevalence. Addressing mental health is one of the most important workers that serving the people in the early months of the outbreak of COVID-19, and assessing their cognitive emotion regulation in 9 demotions are strengths of the present study.

Conclusion
The level of health anxiety and anxiety of COVID-19 in the militaries is higher than the normal population. Since anxiety affects the optimal performance of individuals and the military workers are serving the people and the health care workers during the outbreak of COVID-19, planning to reduce anxiety and increase the mental health of the military is recommended. The present study highlighted the need to teach adaptive emotion regulation strategies to the military.

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