

## Surveys of Mental Stress Status and Influencing Factors in Cadets under COVID-19 Epidemic

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### Abstract

**Objective:** To explore the mental stress and influencing factors in cadets, in order to provide the basis for developing mental guidance. **Methods** A questionnaire was conducted to survey 196 cadets by testing their psychological stress self-evaluation. **Results** The psychological stress raw score of cadets were (15.46 ± 3.42), while the standard score were divided into (50.00 ± 10.01), the number of cadets who developed obvious psychological stress, was accounting for 2.6%. In psychological stress self-evaluation testing, the score of item 4 "keep alert to the danger" was the highest, for about (2.20 ± 0.68), of item 3 "be shock of small sound" was the lowest, for about (1.29 ± 0.51). The psychological stress was different between cadets with different genders (P < 0.01). Male cadets scored higher on psychological stress. The psychological stress was different between only child cadets and non-only child cadets (P < 0.05). The psychological stress points of only child cadets were higher than non-only child cadets. Set the score of cadets psychological stress tests as the dependent variable, gender, ethnicity, pre-school rank, age, whether there is an only child, family type, home address, degree, whether it holds a position and relationship status were included as the independent variable to make multiple progressive linear regression analysis. When  $\alpha = 0.05$ , Gender and only child or not were included into consideration. **Conclusion** The psychological stress state of cadets is generally good, the only child and male cadets are more prone to psychological stress symptoms.

### Keywords

COVID-19; Mental Stress; Influencing Factors; Cadets.

### 1. Introduction

Since the outbreak, COVID-19 has not only had an enormous impact on human health, the economy and society, but also has taken a toll on the human psyche[1]. Psychological stress reactions such as anxiety, depression, compulsion and sleep disorders are common in people of many countries during the epidemic.[2-3] The researchers found that students are susceptible to psychological stress response under major public health events[4]. After the outbreak of the epidemic, the military academy immediately adopted closed management. Under the stress of limited movement space, the fear that they or their families will be infected and the unknown date of unsealing, cadets can easily become anxious, irritable, depressed and irritable.

## 2. Objects and Methods

### 2.1. Objects

Selected cadets of a military academy which adopted closed management, aged 21 to 26, all of whom have a high school degree or above, of whom 47 were male cadets and 158 were female cadets. A total of 205 questionnaires were distributed, 200 were recovered, 4 incomplete questionnaires were excluded from the basic situation, and 196 valid questionnaires were obtained, with an effective questionnaire rate of 95.61%.

### 2.2. Methods

#### 2.2.1. Investigation Tools

① The questionnaire was divided into two parts: The general information questionnaire includes 10 items: gender, ethnicity, pre-school rank, age, whether there is an only child, family type, home address, degree, whether it holds a position, and relationship status; ② Psychological Stress Evaluating Test: The psychological stress scale of soldiers compiled by Quanchao Li and Yaning Xie was adopted. [5] PSET consists of 10 topics, the subjects were asked to give a 3-grade rating of "none, sometimes and often" according to their feelings in the last half month.

#### 2.2.2. Questionnaire Method

The author was responsible for the survey in the unit of the cadets team, using the unified instruction language. In order to ensure the accuracy of the test, anonymous method was adopted. After questionnaires were completed, they would be collected on the spot. Then data were input into the computer for statistical analysis by SPSS.

## 3. Results

### 3.1. Psychological Stress of Cadets in Military Academies

**Table 1.** Each entry and frequency distribution of psychological stress self-assessment questionnaire for cadets [n = 196, n(%)]

Item	Frequency of occurrence			Scoring results ( $\bar{x} \pm s$ , score)
	none	sometimes	often	
1	70(35.7)	114(58.2)	12(6.1)	1.70±0.58
2	81(41.3)	113(57.7)	2(1.0)	1.60±0.51
3	145(74.0)	46(23.5)	5(2.6)	1.29±0.51
4	29(14.8)	98(50.0)	69(35.2)	2.20±0.68
5	125(63.4)	63(32.1)	8(4.0)	1.40±0.57
6	130(66.3)	57(29.1)	9(4.6)	1.38±0.57
7	73(37.2)	116(59.2)	7(3.6)	1.66±0.54
8	98(50.0)	91(46.4)	7(3.6)	1.54±0.57
9	130(66.3)	64(32.7)	2(1.0)	1.35±0.50
10	132(67.3)	62(31.6)	2(1.0)	1.34±0.50

The original score of psychological stress of cadets was 10.00 ~ 25.00 (15.46 ± 3.42), and the standard score was (50.00 ± 10.01). Among them, there were 5 cadets with a standard score of ≥ 70 points (2.6% of the total number of cadets). Among the items, The two highest scoring items are item 4 "keep alert to the danger" (2.20±0.68) and item 1 "poor sleep" (1.70±0.58); item

10“In my mind and dreams, I often think of some kind of catastrophic event”and item 3 “be shock of small sound”scored poorly,are (1.34± 0.50) and (1.29 ± 0.51) respectively. Each entry and frequency distribution of psychological stress self-assessment questionnaire for cadets.( See table 1).

### 3.2. Comparison of Psychological Stress of Cadets in Different Characteristics

The difference was statistically significant in the comparison of psychological stress scores of only child cadets (P<0.05); There were statistically significant differences in psychological stress scores of cadets of different genders (P<0.01). There was no statistical difference in other aspects (P>0.05)(see Table 2).

**Table 2.** Comparison on psychological stress scores of cadets with different status (n = 196)

Item	Number of people (n)	Total point (x±s)	t/F	P
<b>Gender</b>				
Male	42	16.69±3.06		
Female	154	15.12±3.45	2.671*	0.008
<b>Ethnic group</b>				
Ethnic Han	178	15.37±3.40		
Minority	18	16.33±3.60	0.123	0.257
<b>Pre-school rank</b>				
Conscripts	125	15.45±3.48		
sergeancy	71	15.48±3.34	0.219	0.952
<b>Age</b>				
<22	13	15.15±3.02		
22-24	143	15.48±3.54	0.056	0.946
>24	40	15.50±3.16		
<b>Whether or not you are an only child</b>				
Yes	63	16.35±3.17		
No	133	15.04±3.47	2.540*	0.012
<b>Family category</b>				
Parents	150	15.31±3.40		
Grandparenting	21	15.76±3.00	0.695	0.500
Single parent	25	16.12±3.92		
<b>Home address</b>				
Countryside	112	15.39±3.26		
Town	84	15.55±3.65	0.941	0.755
<b>Education background</b>				
High School	121	15.32±3.26		
Junior college	43	15.93±3.95	0.520	0.596
Undergraduate	32	15.34±3.32		
<b>Whether to serve as a backbone</b>				
Yes	40	15.55±3.34		
No	156	15.44±3.45	0.188*	0.851
<b>Love situations</b>				
Single	150	15.25±3.43		
In love	46	16.15±3.35	0.795	0.117

Note:“\*” is the value of “t”

### 3.3. Multiple Progressive Linear Regression Analysis of Psychological Stress of Military Cadets

Set the score of cadets psychological stress tests as the dependent variable, gender, ethnicity, pre-school rank, age, whether there is an only child, family type, home address, degree, whether it holds a position and relationship status were included as the independent variable to make a multiple progressive linear regression analysis. When  $\alpha = 0.05$ , Gender and only child or not were included into consideration. (see Table 3).

**Table 3.** Multivariate stepwise linear regression analysis of psychological stress

Dependent variable	B	SE	$\beta$	T	P
Constant	20.526	1.368		15.002	0.000
Gender	-1.587	0.578	-0.191	-2.746	0.007
The one-child	-1.330	0.508	-0.182	-2.619	0.010

## 4. Discussion

The results of this investigation show that the psychological stress response of the tested cadets is not very obvious, only 5 cadets have a high degree of psychological stress, accounting for 2.6% of all the subjects. This may be related to the fact that the cadres of the cadet team usually attach more importance to the psychological adjustment and counseling of the cadets, and may also be related to the small sample content of this survey. The results of this study show that the top two items of the self-rating stress questionnaire are item 4 (keep alert to the danger) and item 1 (poor sleep), with scores of  $(2.20 \pm 0.68)$  and  $(1.70 \pm 0.58)$  respectively, which are consistent with the research results of former researchers. On the one hand, cadets need to complete the tasks of the cadets team, such as posts, internal affairs, ideological education, training and so on, on the other hand, they also need to complete the internship tasks of various departments, sometimes they also face emergency night shift, which results in cadets physical and mental exhaustion, therefore, they may keep alert to dangerous things and sleep poor.

The results of this study show that the psychological stress scores of cadets of different genders are statistically significant ( $P < 0.01$ ), and the psychological stress scores of male cadets are higher. On the one hand, female cadets may be better at self-psychological counseling, and when there are troubles, they will find girlfriends to communicate in time, while boys may not tell others about their inner troubles, but take more of themselves to bear; On the other hand, it may be related to the small number of male cadets in this survey. The survey finds that the psychological stress score of the only child cadets was higher than that of the non-only child cadets, and the comparison between the two groups was statistically significant ( $P < 0.05$ ). This is consistent with previous studies results: only children have lower mental health levels than non-only children. This study also finds that the psychological stress level of military cadets increases with age, which is consistent with Xiaojing Dai's findings. Of the 40 older cadets, 32 were single. Older cadets may worry about their personal relationships, while the military academy's management is relatively closed, making it difficult for them to meet new friends. This conflict may cause them to feel greater pressure and thus increase psychological problems.

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