

The mediating role of psychological resilience between stress and mental health in newly trained soldiers

Duoduo Yu^a, Cunchun Ye^{b,*}, Xianji Ma^c, Yuhang Yang^d

Department of Education, Yunnan Normal University, Kunming, Yunnan, China

^a1299052890@qq.com, ^b956117664@qq.com, ^c1650151283@qq.com,

^dyunnuyangyuhang1998@163.com

**Corresponding author*

Keywords: Newly trained soldiers; Psychological resilience; Pressure; mental health

Abstract: A questionnaire survey was conducted on 419 newly trained soldiers using the Connor Davidson Resilience Scale, Chinese Perceived Stress Scale, and Symptom Self Rating Scale. The collected data was statistically analyzed using the statistical software SPSS26.0. Research shows that the stress level of newly trained soldiers is relatively low, and the total score of psychological resilience is higher than the total score of psychological resilience of new soldiers on the plateau and the total score of psychological resilience of new soldiers in field troops, indicating that the psychological resilience of newly trained soldiers in this study is better; The total score of newly trained soldiers in terms of mental health is significantly lower than the 2016 military norm and the Chinese norm, indicating that the newly trained soldiers in this study have good psychological conditions; The stress of newly trained soldiers has an impact on their mental health through the mediating effect of psychological resilience.

New recruits are a group of young people recruited from all over the country. Newly trained soldiers refer to a group of new recruits who gather to live and train together after enlistment. The temporary establishment formed by them is called the New Army Company. After receiving three months of military and political training, newly trained soldiers will become familiar with the daily life of the military, laying the foundation for future professional and work training. As a special group in the military, newly recruited soldiers need to transform from a social youth or university student to a qualified soldier. For newly trained soldiers, the military is a different unfamiliar environment from the local area, which to a large extent can lead to various negative emotions and psychological problems among newly trained soldiers. New training is a period that every soldier must go through and a crucial part of completing new tasks. With the orderly advancement of practical training in the army, the requirements for the psychological quality of new recruits are further improved. Especially when the environmental conditions are difficult, training tasks are highly concentrated or even dangerous, new recruits are prone to being in a state of stress, which affects their mental health level. [1]

Psychological resilience includes psychological resilience, resilience and recovery. Like a spring, resilience can rebound and recover in the face of pressure, so that the psychological state fluctuates within a certain range, and finally tends to a healthy equilibrium state. Studying the relationship

between psychological resilience, stress, and mental health can effectively alleviate the psychological pressure of new recruits, improve the overall quality of military personnel, and reserve talents with high psychological quality for future wars.

The mental health status of newly trained soldiers is not only related to individual mental health, but also one of the important factors in improving the combat effectiveness of the army. It directly affects the daily life order of the army and the quality of training and assessment, and is also an important quality indicator of China's military construction status. In the new era, our Party and the people have higher requirements for military construction. Understanding the psychological state of military officers and soldiers, timely understanding the real needs of grassroots officers and soldiers, and how to apply scientific and effective measures to improve the psychological quality of officers and soldiers in the military are currently urgent problems that need to be solved at the grassroots level.

1. Research methods

1.1. Selection of research subjects

A cluster sampling method was used to conduct a questionnaire survey on 419 newly trained soldiers in a rocket army unit of the People's Liberation Army of China. The survey process was organized by the new soldier squad leader and completed through mobile phones. After removing invalid questionnaires, the number of valid questionnaires obtained was 384, with a recovery effectiveness rate of 91.65%.

1.2. Selection of research tools

1.2.1. Connor Davidson resilience scale

The Connor Davidson Resilience Scale (Chinese version) is a method for evaluating psychological resilience, which has been tested in different environments since the development of the questionnaire and has been modified into multiple versions. This test uses the Connor Davidson Resilience Scale (CD-RISC), which was translated and revised by Xiao Nan and Zhang Jianxin in 2007. The scale consists of 25 items and has three dimensions: resilience, strength, and optimism. During the testing, unified guidelines are used, and the participants fill out the scale according to their actual situation. This scale uses Likert scores ranging from 0 to 4, and the total score is directly proportional to psychological resilience. Cronbach of the scale α The coefficient is 0.91. Related studies have shown that the scale has good reliability and validity when applied to military personnel. In this survey, Cronbach of the scale α The coefficient is 0.94. [2]

1.2.2. Chinese version of Perceived Stress Scale

The Chinese Perceived Stress Scale (CPSS) was used, which was developed by Cohen and revised by Yang Yanzhong and Huang Hanteng. The scale consists of 14 questions, including two dimensions of tension and loss of control. The scale adopts a Likert 5-level scoring system, and the higher the total score, the more significant the psychological pressure of the subjects. The scale has been proven to have good reliability and validity. Cronbach of the scale α The coefficient is 0.78, and the Cronbach of this scale in this survey α The coefficient is 0.72. [3]

1.2.3. Symptom self-assessment scale

The Symptom Check list-90 has been widely used in mental disorder examinations and

psychological disease clinics, and can be used by people over 16 years old. The scale was compiled by Dero gatis and revised by Wang Zhengyu, consisting of 90 items and using 10 factors for psychological measurement. The scale adopts the Likert 5-level scoring method, and the higher the score, the lower the level of mental health. Conversely, the better the mental health status. In this survey, Cronbach of the scale α The coefficient is 0.89. [4]

2. Results and Analysis

2.1. Basic characteristics of survey subjects

A total of 419 newly trained soldiers from a certain rocket army unit in 2022 were selected as the survey subjects using cluster sampling method. A total of 384 valid questionnaires were collected and tested on all selected survey subjects, with an effective response rate of 91.65%. All subjects were male, and the basic characteristics of the surveyed subjects were as follows:

There are 122 people with household registration located in cities, accounting for 31.8% of the total population, and 262 people with household registration located in rural areas, accounting for 68.2% of the total population; There are 106 only children, accounting for 27.6% of the total population, and 278 non only children, accounting for 72.4% of the total population; There are 53 people with a high school education level, accounting for 13.8% of the total population, and 331 people with a university education level (undergraduate, junior college), accounting for 86.2% of the total population.

2.2. Basic information on stress, mental health, and psychological resilience of newly trained soldiers

The average stress score of newly trained soldiers in this survey is 31.22 points, with a standard deviation of 7.58 points, a minimum of 15 points, and a maximum of 45 points.

The SCL-90 factor scores and total scores of newly trained soldiers are lower compared to the Chinese norm and the 2016 military norm. The results indicate that there is a significant difference in the overall mental health status of new recruits compared to the national norm for military mental health. At the same time, there are also significant differences in the factor dimensions of somatization, compulsion, interpersonal relationships, depression, anxiety, hostility, terror, paranoia, and psychosis.

The psychological resilience score of newly trained soldiers indicates that there is a significant difference in their psychological resilience ability compared to other soldiers in this survey.

2.3. The correlation between stress, mental health, and psychological resilience among newly trained soldiers

There is a significant negative correlation between the stress of newly trained soldiers and their mental health level ($r=0.226$, $P<0.01$), indicating that the higher the stress of soldiers, the lower their mental health level; There is also a significant negative relationship between stress and psychological resilience ($r=-0.555$, $P<0.01$), indicating that the higher the pressure, the lower the psychological resilience of a person; There is a significant positive relationship between psychological resilience and mental health ($r=-0.243$, $P<0.01$), indicating that the better psychological resilience, the higher the mental health level of soldiers.

3. Discussion

3.1. Group specificity of the surveyed subjects

The subjects of this study have certain particularities, as they are a special group worth paying attention to, whether for the military or society. They are in a period of transition from a social youth to a qualified soldier, and changes in the environment and increased training intensity can easily lead to negative psychological emotions such as anxiety and disgust. The army is a relatively special existence, which also determines that soldiers often face various pressures. During the training period of newly trained soldiers, they not only need to endure strict training, but also need to adapt to the relatively closed environment of the army. Newly trained soldiers in the transitional period are a special group of the army. Secondly, staying away from parents and family, turning in all communication devices such as mobile phones and being in a relatively closed environment is a challenge for young people in the new era of the Internet who are inseparable from their phones. Related studies have shown that mobile phone use is largely a form of forced use and an addictive behavior, which forces newly trained soldiers to break free from phone dependence and easily lead to negative emotional experiences. [5]

3.2. Analysis of the basic situation of stress, mental health, and psychological resilience of newly trained soldiers under investigation

The results of this study indicate that the newly trained soldiers surveyed have lower mental health scores, and the lower the scores on the Symptom Checklist, the better their mental health status. The newly trained soldiers in this study come from ordinary groups across the country, who have been selected layer by layer and ultimately become members of the military group. Therefore, comparing the mental health scores of the newly trained soldiers with the military norm (2016 version) and the Chinese norm has certain persuasiveness. The results confirm that the psychological health of newly trained soldiers is at a high level; The newly trained soldiers surveyed had higher psychological resilience scores, and the higher the score on the Connor Davidson Resilience Scale, the greater their psychological resilience. The results of this study indicate that newly trained soldiers have better psychological resilience. The newly trained soldiers surveyed have a higher level of mental health and resilience, while experiencing lower levels of stress, which is consistent with previous studies. This largely depends on strict screening before enlistment, with excellent physical and psychological qualities. This provides a good psychological foundation for coping with potential wars in the future, adapting to high-intensity training assessments, and conducting daily work, learning, and life normally. As newly trained soldiers, the reasons for the high level of psychological resilience of the newly trained soldiers in this survey are as follows: In this study, all male participants had a high school or above education level, while in previous studies, there was a certain proportion of newly trained soldiers with a junior high school education level. However, research has found that education has a certain impact on the psychological resilience of new soldiers, and the higher the education level, the greater their psychological resilience. So in this survey and research, the newly trained soldiers had a higher score of psychological resilience and had better psychological resilience. [6]

A score of less than 42 on the Chinese version of the Perceived Stress Scale indicates that the subjects feel moderate or low stress. The newly trained soldiers surveyed have scores in the moderate or low stress dimension, with low stress levels, consistent with the research results of Han Wenyang et al. This indicates that they are able to cope with challenges in life and have a strong ability to withstand pressure, which is a necessary quality for every qualified soldier. Although the suicide rate of military personnel is much lower than that of the general public, it is necessary to

maintain a high level of attention to the psychological health of military personnel. The collateral effects caused by suicide will disrupt the normal work and life of the troops, have psychological adverse effects on comrades in the same unit, and even weaken the combat effectiveness of the unit. Therefore, soldiers with high psychological quality should be selected for conscription and pay attention to the emotional status of newly trained soldiers, It is crucial to timely evaluate the mental health level of newly trained soldiers.

3.3. Related Analysis on Stress, Mental Health, and Psychological Resilience of Newly Trained Soldiers under Investigation

Potential war, strict training and assessment, and interpersonal communication pressure are factors that affect the mental health of newly trained soldiers. Research has shown that in rocket forces, obsessive-compulsive disorder and interpersonal sensitivity are the most significant psychological problems, indicating that the occurrence of obsessive-compulsive disorder and relationship sensitivity is common. The harsh living conditions and working environment of rocket officers and soldiers, as well as strict organizational discipline, have brought greater pressure to them; Young officers and soldiers with active thinking, emotional impulsiveness, extreme personality, and paranoia can make their stress reactions more sensitive, which can easily cause compulsion and sensitivity to interpersonal relationships, leading to anxiety, depression, hostility, and paranoia. The results indicate that under objective stress conditions, newly trained soldiers have higher mental health scores and poorer mental states. In addition, there is a significant positive correlation between psychological resilience and mental health, which is consistent with previous research results. When an individual has a high level of psychological resilience, a strong desire for knowledge, expectations for life, and a better mental state. The mental and psychological health issues of newly trained soldiers are an important part of the construction of the rocket army. The better the psychological resilience of newly trained soldiers, the less they use depression regulation methods in controlling emotions, and the better their mental health status. This has a certain theoretical guidance role for the selection and training of new soldiers.

3.4. The mediating role of psychological resilience between stress and mental health among newly trained soldiers under investigation

According to the analysis of the mediation model, psychological resilience plays a partial mediating role between stress and mental health. Although the psychological health status of newly trained soldiers may be influenced by factors such as potential war, training assessments, and interpersonal relationships, psychological resilience serves as a mediating role, which alleviates the negative effect between stress and mental health level of the surveyed newly trained soldiers. When the psychological resilience ability of newly trained soldiers increases, the negative impact of stress on their mental health will be reduced. By enhancing psychological resilience, one can reduce their stress response. Psychological resilience has a significant impact on the psychological and physiological problems and negative effects of stress that individuals experience in harsh environments, such as emotional problems and poor sleep.[7]

This study indicates that there are two direct and indirect relationships between stress and mental health. Firstly, stress can directly affect an individual's mental health; Secondly, stress can leverage its impact on psychological resilience, thereby affecting the mental health status of newly trained soldiers during their time in the military, resulting in a decrease in individual mental health levels. Psychological resilience regulates the stress of newly trained soldiers. If they have a strong perception of stress, they can enhance their psychological resilience to promote their mental health and maintain their physical and mental health. When facing the same difficulties or setbacks, due to

differences in the psychological resilience of individual recruits, the same stress event has different effects on their mental health. Newly trained soldiers with poor psychological resilience cannot make timely and positive adjustments, and cannot achieve a good psychological state, resulting in being frustrated by current stress events, which can have a negative impact on their mental health.

Newly trained soldiers with high levels of psychological resilience are able to adjust in a timely manner and actively respond to stressful events, keeping themselves in the best psychological state and adapting well to the new environment, thereby maintaining a high level of psychological health. Therefore, the psychological health issues of newly trained soldiers need to be taken seriously. While conducting military training, military leaders and cadres need to mobilize the enthusiasm of newly trained soldiers, enhance their innovation in handling various affairs, continuously enhance their determination and confidence in dealing with potential stress events, and maintain a high level of psychological resilience in the long term. When facing difficulties, they can persist, This enables newly trained soldiers to adapt to military life in a good psychological state.

4. Conclusion

This study draws the following conclusions through the study of the relationship between stress, psychological resilience, and mental health of newly trained soldiers:

(1) There is a correlation between stress, psychological resilience, and mental health among newly trained soldiers. There is a significant negative relationship between stress, psychological resilience, and mental health, while there is a significant positive relationship between psychological resilience and mental health.

(2) Psychological resilience plays a partial mediating role in the relationship between stress and mental health. On the one hand, stress directly has a negative impact on the mental health of newly trained soldiers, and on the other hand, stress can leverage its impact on psychological resilience, thereby affecting the mental health of newly trained soldiers during their time in the military.

(3) The pressure on newly trained soldiers is mostly caused by objective factors. Therefore, we can enhance the psychological resilience of newly trained soldiers and improve their ability to face stressful events, so as to achieve the goal of maintaining their mental health for a long time. In addition, we can also adopt methods to reduce the stress perception of newly trained soldiers to weaken their adverse effects on mental health.

References

- [1] Yan Jinyu, Li Hongzheng, Wang Qian. *Research progress on maladaptation in new recruits [J]. Occupational and Health*, 2018, 147-150.
- [2] Yu Xiaonan, Zhang Jianxin. *Comparison of the Application of Self Resilience Scale and Connor Davidson Resilience Scale [J]. Psychological Science*, 2007 (05): 1169-1171.
- [3] Yang Tingzhong, Huang Hanteng. *Epidemiological study on psychological stress among urban residents during social transformation [J]. Chinese Journal of Epidemiology*, 2003, 24 (9): 760-764.
- [4] Liu Yuanyuan, Wu Shengjun, Li Yongqi, Shao Feng, Su Jingkuan, Liu Xufeng. *A survey of the current state of psychological symptoms in the Chinese population based on SCL-90 [J]. Chinese Journal of Mental Health*, 2018, 32 (05): 437-441.
- [5] Yu Guoliang, Wang Pengcheng. *The impact of mobile phone dependence on mental health: effects and responses*, *China Social Science Journal*, 2021.
- [6] Hua Yan, Huang Chaoxu, Shi Yanru, Shi Ruijie, Su Xiangni, Ni Chunping. *Analysis of the psychological health status and influencing factors of officers and soldiers in a certain rocket army unit [J]. People's Military Medical Journal*, 2018, 5-8, 5-8.
- [7] Yang Hongzhi, Cui Sheng, Zhang Lijun, Guo Yuhua, Meng Qingna, Li Xiaomei. *Analysis of the mesomeric effect of resilience between clinical nurses' perceived stress and mental health [J]. Health Medicine Research and Practice*, 2021, 43-47.