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Design and Psychometric Validation of a Mental Health Literacy Questionnaire for Conscript Soldiers: A Step Toward Strengthening Psychological Well-being in the Military

Erfan Soleimani-Sefat [1], Akram Parandeh [2], Abolfazl Babaie [3], Fatemeh Rahmati [4*]

[1] Student Research Committee, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran
[2] Nursing Care Research Center, Clinical Sciences Institute, Nursing Faculty, Baqiyatallah University of Medical Sciences, Tehran, Iran
[3] Student Research Committee, Baqiyatallah University of Medical Sciences, Tehran, Iran
[4] Health Research Center, Lifestyle Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran

***Corresponding Author:** Fatemeh Rahmati, Ph.D., Health Research Center, Lifestyle Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran. Tel: +982187554469, Email: fatemeh_rahmaty@yahoo.com

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Abstract

The mental health of military personnel is particularly important due to the stressful nature of military service and the specific conditions of the military environment. The aim of this study was to design and evaluate a mental health literacy questionnaire for Iranian conscripts. This study was conducted in three stages, including design based on a literature review, content and formal evaluation by experts, and exploratory and confirmatory factor analysis with reliability testing on 251 soldiers. The results showed that the final questionnaire, with 31 items in four domains (knowledge of diagnosing mental disorders, attitudes toward mental disorders, knowledge of the causes of mental disorders, and knowledge of activities and resources for promoting mental health), has good psychometric properties. This tool can be used as a basis for screening, educational interventions, and policymaking in the field of military mental health.

Keywords: Mental Disorders, Psychometrics, Health Literacy, Mental Health Literacy

1. Background

Mental health, as one of the main pillars of military organizations, plays a decisive role in social health.[1] Conscripts are at high risk of developing mental disorders due to the specific conditions of military service, sudden changes in lifestyle, environmental pressures, and heavy responsibilities.[2] Therefore, mental problems have increased in this group, and its consequences include reduced productivity, increased medical costs, and on the other hand, the concept of "mental health literacy" refers to a person's knowledge and beliefs about mental disorders, their diagnosis, management, and prevention.[3,4] This concept includes components such as the ability to recognize disorders, awareness of causes, attitudes toward treatment, and skills in searching for mental health information.[5] The importance of this concept in the military is twofold, as improving mental health literacy can increase the willingness to seek help and improve the quality of life of soldiers.[6]

Despite the design of various instruments in different countries to measure mental health, there has been no standardized instrument for the military in Iran to date.[7] This gap has prevented policymakers and military commanders from accurately assessing the level of awareness and attitude of soldiers towards mental health.[8] This study is the first attempt to design and psychometrically validate a valid questionnaire in this field and can be used as a basis for formulating educational and treatment policies in the armed forces.[7]

2. Methods

The initial design of the instrument was carefully developed based on an extensive and systematic review of the existing scientific literature related to mental health literacy. This comprehensive review ensured that the conceptual foundation of the tool was firmly grounded in prior research findings, theoretical frameworks, and empirical evidence. By drawing upon a wide range of scholarly sources, the design process aimed to capture the most relevant dimensions of mental health literacy and to ensure that the instrument would be both scientifically rigorous and practically applicable.

Following the initial design, the content and formal evaluation of the instrument was conducted by a panel of

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qualified mental health professionals. Their expertise was essential in verifying the relevance, clarity, and appropriateness of each item. In addition to professional evaluation, a preliminary administration of the instrument was carried out on a sample of soldiers. This stage served as a pilot test, allowing the researchers to identify potential issues in item wording, redundancy, or conceptual overlap. As a result of this process, the total number of items was reduced to improve efficiency and focus. At the same time, the Content Validity Ratio (CVR) and Content Validity Index (CVI) were calculated and validated, confirming that the retained items met acceptable standards of content validity.

Subsequently, both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed on data collected from soldiers using a convenience sampling method. The exploratory analysis helped to uncover the underlying factor structure of the instrument, while the confirmatory analysis tested the adequacy of this structure against theoretical expectations. Together, these statistical procedures provided strong evidence for the construct validity of the instrument. Finally, the reliability of the scale was examined using Cronbach's alpha coefficient, which was calculated for the entire set of items. The results demonstrated satisfactory internal consistency, confirming that the instrument reliably measures the intended aspects of mental health literacy across the studied population.

3. Results

Exploratory factor analysis revealed a four-factor structure of the questionnaire, which together explained about half of the total variance of the scale. The extracted factors were:

- Knowledge of diagnosis of mental disorders.
- Attitude towards mental disorders.
- Knowledge of causes of mental disorders.
- Knowledge of activities and resources for promoting mental health.
- A final questionnaire consisting of items in the aforementioned domains was developed and validated. The correlation coefficients of the items with the total score of the subscales were reported.

4. Discussion and Conclusion

The research findings showed that the designed questionnaire has a good structure that covers the key dimensions of mental health literacy.[7] This tool had good reliability with a Cronbach's alpha of 0.76 and can be used as a valid tool to measure the level of mental health literacy in conscripts.[9]

The main innovation of this research is the popularization of a tool for assessing mental health literacy in the military community.[10] This questionnaire not only allows for the accurate identification of soldiers' strengths and weaknesses in the field of mental health, but can also serve as a basis for designing targeted educational interventions.[11] For example, if the results of the questionnaire show that soldiers' knowledge about the causes of mental disorders is low, special educational programs can be designed to improve this knowledge.[12]

Practical applications of the questionnaire include:

- Psychological screening: Rapid identification of soldiers at risk of mental disorders and referral to specialized services.
- Educational interventions: Designing training courses tailored to the real needs of soldiers in the field of mental health.
- Health policymaking: Developing comprehensive programs to promote the mental health of the armed forces based on reliable data.
- Reducing medical costs: Focusing on prevention and raising awareness instead of costly and late treatments.

This tool can help reduce mental disorders and strengthen positive attitudes towards mental health among soldiers.[13] Ultimately, the use of a mental health literacy questionnaire can lead to an increase in the quality of life of soldiers and a reduction in the economic burden caused by mental disorders.[14]

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Author Contributions

Authors contributed equally to this work.

Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

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