



Case Report

Survey and Preliminary Formulation of a Rapid Screening Scale Based on Common Psychological Problems of Inpatients

Chunqi Ai^{1#}, Xi Wang^{2#}, Jingping Mu³, Gang Jian³, Shun Zeng¹, Long Pan⁴, Xiong Chen^{1*}

¹Mental Health Center, Taihe Hospital Affiliated to Hubei University of Medicine, China

² Department of Sleep Disorders, Taihe Hospital Affiliated to Hubei University of Medicine, China

³ Dean's Office, Taihe Hospital Affiliated to Hubei University of Medicine, China

⁴ Department of Acupuncture and Moxibustion, Xiangyang Hospital of Traditional Chinese medicine, China

Authors Contributed Equally

***Corresponding author:** Xiong Chen, Mental Health Center, Taihe Hospital Affiliated to Hubei University of Medicine, Shiyan, Hubei 442000, China

Citation: Ai C, Wang X, Mu J, Jian G, Zeng S, Pan L, Chen X (2020) Survey and Preliminary Formulation of a Rapid Screening Scale Based on Common Psychological Problems of Inpatients. Ann Case Report 14: 490. DOI: 10.29011/2574-7754.100490

Received Date: 29 September, 2020; **Accepted Date:** 05 October, 2020; **Published Date:** 12 October, 2020

Abstract

Background: This study has established a rapid screening scale for the common psychological problems of inpatients through a series of procedures and scale preparation procedures.

Methods: Through literature review, group discussions, clinical medical personnel investigation, expert consultation and pre-investigation of inpatients beforehand, item selection, modification and optimization, the inpatients with common psychological problems of rapid screening scale items were formed. By using the data of sample survey data beforehand was initially used for reference and set the scale score level demarcation.

Results: The name of the scale was finally established as the "Taihe Hospital Emotional Index (THEI)", and included 11 items and 6 dimensions for rapid screening of the inpatients. This was a self-assessment scale with 0-4 grades. The total score of all the items in the scale was added up, and ranged from 0-44 points. The higher the score is, the more serious the patients' mental health problem is.

Conclusions: This study prepared a screening scale based on the common psychological problems of inpatients in the general hospitals. It has the advantages of low entry and clinical use, which subsequently can focus early on patients with common psychological problems, improve the ability of non-specialist nurses to identify the common psychological problems in a timely intervention, and prevent the occurrence of adverse events such as suicide.

Keywords: General hospitals; Inpatients; Psychological problems; Rapid screening scale

Abbreviations: BPRS: Brief Psychiatric Rating Scale; CCMD-3: Chinese Classification and Diagnostic System of Mental Disorders, Third Edition; DSM-V: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; ICD-10: International Classification and Diagnostic System of Mental Disorders, Tenth Edition; PSQI: Pittsburgh Sleep Quality Index; SAS: Self-rating Anxiety Scale; SDS: Self-rating Depression Scale; THEI: Taihe Hospital Emotional Index

Background

Majority of the patients with psychological or mental diseases choose a general hospital for the first visit. The hospitalized patients in general hospitals are accompanied by psychological problems, but the majority of these patients choose non-mental and non-psychological specialties such as neurology, gastroenterology, cardiology, etc. [1]. The general psychology of the patients would be affected to varying degrees when suffering from physical illnesses. Medical education in China mainly concentrates on providing the diagnosis and treatment for long-term physical or organic diseases, neglecting the training for

human care and the ability to provide mental health service. The effects of factors such as heavy workload of medical workers, lack of knowledge regarding psychological or mental diseases, prejudice of psychosocial patients, etc. [2]. Resulted in the neglect of psychological problems of inpatients in general hospitals.

Hence, it is necessary to have a rapid screening tool that can be used as a routine check-up and corresponding intervention strategy according to clinical classification for mental health. There are currently no studies on comprehensive investigation and diagnosis of psychological symptoms of hospitalized patients using standardized interview tools in general hospitals of China. The current studies mainly focused on patient groups with specific disease or specific type of disease such as patients with insomnia, and the incidence rates of various studies are different [3]. This may be due to use of varied survey tools, and the different patient groups or disease types involved in the surveys. Therefore, this study intended to design a localized rapid screening tool for psychological problems and apply it clinically.

Methods

Theoretical Basis of Scale Formulation

The inpatients hospitalized due to physical diseases would have a certain impact on various other aspects of patients such as psychological and physical health. The physical effects of majority of the physical diseases can be healed and restored with the help of clinical treatment and rehabilitation therapies. However, the damage caused psychologically remains difficult to discern, resulting in psychological illness of the patients with physical diseases, and ignoring the effects of psychological aspects of patients. In this study, the common negative emotions of hospitalized patients such as anxiety, depression, sleep, as well as symptoms related to suicide and thinking cognition were investigated to construct an identification and screening tool for patients with common psychological problems after admission. The theoretical basis for this scale construction has been adopted

from the classic “theory of psychological stress”, wherein the “hospitalization (various reasons)” of patients as a stress stimulus was treated. The psychological reaction of stress involves consideration of comprehensive stimulation of culture, society, psychology, body and mind, biology, etc. [4].

Determination of the Contents of the Scale

The following 7 aspects were included to determine the contents of the scale: (1) clinical practice and clinical experience; (2) literature and review studies on common psychological problems in inpatients, especially the results of psychological problems reported in previous clinical studies; (3) existing questionnaires and scales for screening mental or emotional problems; (4) existing diagnostic criteria related to mental disorders (DSM-V, ICD-10, CCMD-3) commonly used in clinical practice; (5) inpatients with psychological problems as observed by field investigations and departmental visits; (6) results of qualitative interview of inpatients; and (7) consideration of social and cultural backgrounds as well as public language in China.

Determination of the Dimensions of the Scale

Firstly, the dimensions of measuring the objects should be determined by scale formulation. Combined with the theoretical and conceptual frameworks of this study, a screening scale was preliminary designed for the common psychological problems of inpatients. The scale consisted of the following 6 dimensions: anxiety, depression, sleep, hostile behavior, thinking and suicide. The number of final dimensions and the items included in the scale were verified and confirmed by group discussion, investigation by medical staff, expert consultation, pre-investigation of samples, etc.

Technical Roadmap for Scale Formulation

The technical roadmap of this study was developed based on the theoretical basis, conceptual framework and related literature materials in scale formulation (Figure 1).



Figure 1: Technical roadmap of the preliminary formulation of the scale.

Establishment of the Item Pool of the Scale

Literature Review

A large number of relevant literatures on common psychological problems of inpatients were searched and read, especially the results of qualitative studies on specific manifestations of inpatients with psychological problems. Then, the common and representative items were selected and included in the item pool. In addition to reading of relevant studies, a large number of textbooks, professional books and online materials on common psychological problems and mental illnesses were used as reference.

Diagnostic Criteria

Core items in the foreign diagnostic criteria for mental disorders were used. These mainly included description of core symptoms of neurosis such as anxiety, panic, depression and mania in mood disorders, as well as mental and behavioral abnormalities in mental disorders, etc. in the American Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V), the International Classification and Diagnostic System of Mental Disorders, Tenth Edition (ICD-10), and the Chinese Classification and Diagnostic System of Mental Disorders, Third Edition (CCMD-3), providing and basis for the establishment of item pool.

The Existing Assessment Scales

The self-assessment scale commonly used in clinical practice was carefully studied, such as the Self-Rating Anxiety Scale (SAS), the Self-Rating Depression Scale (SDS), the Pittsburgh Sleep Quality Index (PSQI), the Self-examination scale of SCL-90 mental health problems (SCL-90), the Brief Psychiatric Rating Scale (BPRS), Beck Suicide Questionnaire, etc. The contents that were closely related to most of the other psychological problems in the inpatients and those that can reflect the core symptoms were screened to be included in the item pool.

On-Site Interview of the Patients

The interviewees were the inpatients in the rehabilitation hospitals, obstetrics and gynecology as well as oncology departments of our hospital, and the purposive sampling method was used. Inclusion criteria of the interviewees were as follows: (1) patients hospitalized for 7 days to 1 month; (2) patients aged ≥ 15 years without gender constraint; (3) patients with the educational level of above junior high school; (4) patients who were conscious and have good cognitive functions (Mini-Mental State Examination, i.e. MMSE ≥ 10 points); (5) patients with complete medical records and imaging examination results; and (6) patients who signed the informed consent. Exclusion criteria were as follows: (1) patients with extremely severe physical illness; (2) patients with poor cognitive functions (Mini-Mental State Examination, i.e. MMSE < 10 points); (3) patients who

were unable to communicate effectively due to aphasia, other problems etc.; (4) patients who refused to cooperate in filling the questionnaire; and (5) patients with education level lower than junior high school or age less than 15 years old.

Before undergoing the formal interview, a 1-week survey was performed for obtaining the clinical basic data to get familiarize with the ward environment and have a preliminary understanding of the mental conditions of the patients in the above departments. Based on the results of the preliminary survey and familiarizing the case data by referring to the previous literature, the preliminary outline of inpatients was designed as below: Hello, I am your....., in order to provide better and more comprehensive medical services for you, our hospital evaluated your physical indicators and designed a questionnaire for each patient accordingly to better understand your recent mental health status. Please fill out this questionnaire carefully and independently according to your situation in the recent 1 month.

The more authentic and reliable the information you provide to our medical team, the more compressively we can understand the mental and physical situations of yours'. Thus, it will be helpful for us to develop a scientific and rational treatment plan for you. According to the above inclusion and exclusion criteria, eligible patients were selected after obtaining the consent of the patients, and an on-site interview was performed to fully understand the main manifestations of psychological problems and the main psychological problems that needed to be solved. Transcripts or recordings can be taken for some patients with characteristics of atypical psychological performance after obtaining their consent. After the interview, the results were analyzed to extract the psychological problems that are commonly complained by patients as the item pool of the scale.

The Principle and Form for the Expression of the Items

This study tried to achieve concise statement and clear expression as much as possible. Furthermore, the way of expression was suitable for the national conditions and cultural background. Items of the scale were formulated using self-assessment. Responsive items of the scale used the scoring method of Likert 0-4 grades [5]. In this study, the influential factors of the psychological problems of inpatients were considered more comprehensively, and the tools formed were more concise, manifesting as few items and the scoring questions, including "none, occasionally, part of the time, most of the time and all the time", were answered based on the duration of the symptoms. Ultimately, the dimensional and the total scores were used as evaluation indicators of the measurement results of the scale. Item pool of the scale was preliminarily developed based on the literature review, diagnostic criteria of depression due to mental illnesses, the existing depression assessment scales and the results of patient interview.

Screening and Optimization of the Item Contents

After preliminary confirmation of the contents of the scale items, the contents of the items were further optimized and simplified by group discussion, investigating the clinical use by medical staff, expert consultation and pre-investigation of the patients. Meanwhile, the correctness and publicity of the language were revised by several writers. Medical staff was determined and questionnaires were distributed. The questionnaires were distributed and collected on the spot. The medical staff should complete the questionnaire independently according to their own knowledge and work experience. In this survey, a total of 20 medical staff from the psychiatry, psychology, cardiology and neurology departments of the two comprehensive hospitals in our city (Taihe Hospital and City Hospital) participated in the survey. Four alternative items were prepared for each item contents based on different dimensions. For example, contents such as depression, anxiety and mania were selected for the emotional dimension, and each point included four items.

The common items and the common frequencies were added up, and the contents with the results >50% were retained,

while those with <50% were deleted. Meanwhile, each item was carefully screened by combining with the professional features. Next, an expert consultation was taken from the departments of cardiovascular medicine, neurology, oncology, nursing experts, psychiatrists, psychologists, etc. By means of e-mail, detailed guidelines of the item contents were supplied, and the consultation results in the last round were sent to each expert. The experts were required to reply within a limited time. The experts can add up the clinically practical items that they thought were important. At this stage, 10 experts were invited to conduct this round of research. Next, pre-investigation of the patients to test the feasibility of the clinical practice of the scale was performed. At the same time, the preliminary draft was further improved and revised to establish a formal draft, i.e., the preliminary formulation of the scale.

Results

Rapid Screening Scale of Common Psychological Problems of Inpatients (Table 1).

Name:___ Age:___ Gender:___ Bed No:___ Outpatient/Inpatient number:___

| Questions | None | occasionally | Part of time | Most of time | All of time |
|---|------|--------------|--------------|--------------|-------------|
| 1. Feeling depressed most of time in a day? | 0 | 1 | 2 | 3 | 4 |
| 2. Significantly reduced interest or fun for all activities? | 0 | 1 | 2 | 3 | 4 |
| 3. Blaming yourself or feeling guilty due to feeling worthless? | 0 | 1 | 2 | 3 | 4 |
| 4. Feeling excessively worried or nervous? | 0 | 1 | 2 | 3 | 4 |
| 5. Feeling difficult to calm down? | 0 | 1 | 2 | 3 | 4 |
| 6. Insufficient sleep time or unsatisfactory sleep quality? | 0 | 1 | 2 | 3 | 4 |
| 7. Fear of losing control and have a sense of death? | 0 | 1 | 2 | 3 | 4 |
| 8. Continuous worry or worry about panic attack again? | 0 | 1 | 2 | 3 | 4 |
| 9. Feeling obvious impatience, irritability or bad-tempered? | 0 | 1 | 2 | 3 | 4 |
| 10. Behaviors are controlled by ambient sounds or others? | 0 | 1 | 2 | 3 | 4 |
| 11. Feeling tired or meaningless to live? | 0 | 1 | 2 | 3 | 4 |
| Signature of the physician: | | | | | |
| Total score: | | | | | |

Table 1: Taihe Emotion Index Questionnaire (THEI).

Interpretation of the results, classification and intervention strategy

THEI score was divided into the following four grades:

0-10 points: There were no or only mild adverse emotions (depression/or anxiety) and relevant mental health problems.

11-15 points: There may be mild adverse emotions (depression /or anxiety) and relevant mental health problems.

16-20 points: There may be moderate adverse emotions (depression/or anxiety) and relevant mental health problems.

20 points or more: There may be serious or severe adverse emotions (depression/or anxiety) and relevant mental health problems.

Classification was performed based on the results of the scores. Different grades were given different recommendations and advices simultaneously for clinical reference and usage. 0-10 points: usually a regular observation was performed, but suicide risk should be evaluated if the score of the 11th item was \geq “2” points. 11-15 points: psychological support should be provided by the medical team and nursing group. 16-20 points: psychological support should be provided by the medical staff, family members or companions. Moreover, communication between the medical staff and the patients as well as communication with family members or companions should be performed due to psychological problems of the patients and their potential risks (self-mutilation and suicide, etc.). 21 points and above: high-risk patients were required to be accompanied by family members or companions for 24 hours to prevent suicide, self-mutilation, etc. Consultation by mental health center should be determined by combining with clinical conditions and psychological support should be provided.

Discussion

Based on the biological-psychological-social medical model, the psychological scales of general hospitals should be more comprehensive and targeted, easy to be accepted by the patients, easy to be understood by the physicians, and suitable for the characteristics of a large number of patients and has heavy workload in general hospitals. The application of self-developed rapid screening tools can identify and evaluate the psychological problems of inpatients in a more comprehensive, rapid and short-term manner, achieving early detection and early intervention of the psychological problems and improving the prognosis and fulfilment of patient satisfaction. Moreover, it can improve the communication skills and the doctor-patient relationship, as well as prevent the occupational failure. In addition, it has abroad application prospects of its innovative medical models, saves medical resources, and satisfies the social requirement.

Current studies have initially demonstrated that the incidence rate of physical illnesses combined with mental or psychological diseases was higher when compared to common patients without physical illnesses [6,7]. During the course of the treatment, these patients usually visit a general hospital due to symptoms of physical illnesses. When coupled with the influence of traditional cultural factors in China, it is believed that the patients feel shameful if suffering from mental illnesses; the patients are unwilling to admit that they are sick, and does not visit a mental hospital or a psychiatric hospital. Secondly, there is a high rate of misdiagnosis for this type of patients in general hospitals. Zhou Minjuan has retrospectively studied patients with psychological problems who

are treated in general hospitals of China [8]. The findings revealed that the patients hospitalized due misdiagnosis for two times are up to 70%, resulting in a lot of wastage in resources.

Some scholars have also proposed that illness in hospital itself is considered as a stress stimulus [9]. Recovery from physical illnesses as well as functional recovery would be greatly affected if the psychological factors are not considered seriously. Thirdly, the medical staff in general hospitals currently lacks understanding regarding this disease. Apart from fear of receiving such patients, there is no better way to help these patients. In addition, study on psychological problems of inpatients in China began late and there are fewer studies. Moreover, majority of the subjects are mostly with cardiovascular diseases, tumor diseases and surgical patients [10]. Furthermore, studies on the influential factors and prognosis are often concentrated on a single aspect, such as personality characteristics, coping style, family environment, etc. Fourthly, there is currently no professional tool for psychological assessment or any assessment system for specific inpatients.

Although the clinically and widely used scales such as HAMD, HAMA, etc. have good reliability, several problems are associated with them in clinical application. On one hand, lack of professional knowledge of medical staff in general hospitals may result in insufficient explanation for this type of scales. On the other hand, the patients have poor knowledge regarding the physiological illnesses. The patients feel disgusted if the scales are rashly used, and thus may not cooperate, causing contradiction between doctors and patients. Most of the existing clinical scales target only specific populations and specific diseases, thus screening is not comprehensive. Although the currently used SCL-90 scale can screen mental health problems of the patients, it has several questions, the workload of clinical medical staff is complex and heavy, and there is a high requirement on the educational level of the patients. Thus, it is not accepted by clinical and manic patients [11].

Therefore, it is essential to develop a scale for rapid screening of common psychological problems for inpatients in general hospitals combined with the localization characteristics of our hospital. The scale should be simple and practical, as well as comprehensive for screening the psychological problems. Moreover, it can remind the medical staff to pay attention to the physical and mental health of the patients in a timely manner, as well as provide better mental health services for the patients. The response items were fewer in this scale. Based on the duration of the symptoms of patients, the scoring questions including “none, occasionally, part of the time, most of the time, all the time” were answered based on subjective experience of the patients. In our hospital, inpatients of non-psychology were used as the study subjects. Then, the incidence, distribution characteristics and multiple influencing factors of psychological problems of inpatients were investigated.

Based on this, a rapid screening tool for the psychological problems of inpatients was preliminarily formulated, i.e., “Taihe Emotion Index (THEI)”. The “Taihe Hospital Emotion Index” in Chinese and “Taihe Hospital Emotion Index” in English were abbreviated as “THEI” in English. Questionnaire screening of items 1, 2 and 3 were mainly used for depression of the patients, especially for contents of item 1, wherein the evaluation of acute depressive symptoms was set up. The three questions were consistent with the core symptoms of depression (low mood and decreased interest) and accompanying symptoms of self-assessment. Items 4, 5, 6, 7 and 8 mainly reflected the anxiety symptoms. Among them, item 7 focused on screening whether the patients suffered from panic disorder, and item 8 mainly reflected the acute anxiety symptoms of the patients. Item 6 mainly reflected the sleep problems of the patients. Item 9 mainly showed the hostility emotions of the patient.

If the item 9 score was high, the psychological problems of patients during the hospitalization period should be taken into consideration, especially for the preparation of doctor-patient communication, prevention of patient hostility or disputes, and even cases of hurting the doctors. Contents of item 10 aimed to show the psychiatric problems of the patients. However, we were afraid that direct description of mental diseases might cause patient discomfort or dislike. Therefore, replacement and description were performed using thinking. Most of the psychiatric patients were associated with abnormal thinking, and thus answering this item can help us to have a preliminary judgement. Item 11 mainly assessed the risk of suicide of patients. If there was abnormality seen in evaluating the suicide risk (total score or score of a single item), the patients may have suicide risk. Thus, further assessment for suicide evaluation and prevention should be prepared. It was recommended that the family members should stay with the patients, the level of care should be improved, the consultation should be conducted by specialists, etc. to prevent accidents such as suicide and self-mutilation of the patients.

Conclusion

This scale should be noted that the screening results of this scale can only be used as a reference for clinical medical staff, and not a substitute for diagnostic certificate. Meanwhile, the intervention strategies for different grades were designed. These provide great significance in the correct identification and intervention of the common psychological problems of inpatients in general hospitals, promotion of the development of medical work, as well as comprehensive rehabilitation and prevention of suicide of patients. A patent regarding this has been declared successfully. Further studies should be conducted for improving the reliability and empirical validity of its clinical application.

Ethics Approval and Consent to Participate

Ethical permission was granted by the Ethics Committee of Medical ethics committee of Renming hospital of Wuhan university, and written informed consent was obtained from patients or their guardians.

Consent for Publication

Not applicable.

Availability of Data and Material

Not applicable.

Competing Interests

All authors declare that they have no competing interests.

Authors' Contributions

XC and XW conceived and coordinated the study, designed, performed and analyzed the experiments, wrote the paper. JM carried out the data collection, data analysis, and revised the paper. CA designed the study, carried out the data analysis, and revised the paper. All authors have read and approved the manuscript.

Acknowledgments

None.

Funding

This study was supported by the National key R&D Program of China(2018YFC1314600) and 2017 Utility Model Patent Certificate [grant number 6724998] [Patent number: ZL201720030896.7] and 2018 Soft Science Project of Taihe Hospital, Shiyan [grant number 2018rkt45]. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

References

1. Fei L (2014) Mental Health Problems in China-Challenges and Choices in the 21st Century. *Chinese Journal of Nervous and Mental Diseases* 30: 1-10.
2. Konnopka A, Schaefer R, Heinrich S, Kaufmann C, Lupp M, et al. (2012) Economics of medically unexplained symptoms: a systematic review of the literature. *Psychotherapy and psychosomatics* 81: 265-275.
3. American Academy of Sleep Medicine (2005) International classification of sleep disorders: Diagnostic and coding manual. Westchester, Illinois: America Academy of Sleep Medicine.
4. M DEH, Correll CU, Bobes J, Cetkovich-Bakmas M, Cohen D, et al. (2011) Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. *World psychiatry : official journal of the World Psychiatric Association* 10: 52-77.

5. Wang Z and Quo Q (2016) Application of personal fit indicator in the Likert personality test. *Chinese Journal of Clinical Psychology* 03: 470-474.
6. Koopmans GT, Donker MC, Rutten FH (2005) Length of hospital stay and health services use of medical inpatients with comorbid noncognitive mental disorders: a review of the literature. *General hospital psychiatry* 27: 44-56.
7. Kim J and Choi-Kwon S (2000) Post-stroke depression and emotional incontinence correlate with lesion location. *Neurology* 54: 1805.
8. Zhou M and Yao L (2006) Misdiagnosis and resource waste of psychological disorders in general hospitals and influencing factors. *Chinese Journal of behavioral medicine science* 15: 174-175.
9. Ge M and He X (1999) Advances in nursing research on stress response in hospitalized patients. *Chinese Journal of Practical Nursing* 15: 3-4.
10. Yang H and Liu C (2006) Relevant factors of psychological responses and advance in research on psychological intervention for patients with malignant tumors. *Journal of Nursing Science* 21: 79-81.
11. Kroenke K, Wu J, Yu Z, Bair MJ, Kean J, et al. (2016) Patient Health Questionnaire Anxiety and Depression Scale: Initial Validation in Three Clinical Trials. *Psychosomatic medicine* 78: 716-727.