A review of the development and use of psychological assessment tools for depressive disorders

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Abstract

Based on the diagnostic and Statistical Manual of Mental Disorders (Desk Reference Book) (Fifth Edition) (DSM-5), this paper will systematically review the commonly used assessment tools for depressive disorders. Different measurement tools often lead to inconsistent definition of depression in studies. This paper introduces and compares 10 depression measurement tools used in depression studies in China for researchers' reference.

Keywords

Depressive disorder, depression assessment Scale, psychometric measurement, review.

1. Introduction

Depression is a recurrent affective disorder characterized by significant and lasting mood depression, with high prevalence, recurrence, suicide and disability rates (Malhi & Mann, 2018). It seriously affects the physical and mental health and social function of patients, brings a heavy burden to patients, their families and even the whole society, and has become a serious disease endangering human health (Osler, Bruunsgaard, Lykke & MoNensen, 2015). The World Health Organization predicts that depression will be the number one disease burden in the world by 2030 (Smith, 2014). In the Diagnostic and Statistical Manual of Mental Disorders (Desk reference book) (Fifth edition) (DSM-5), the diagnostic criteria for depressive disorders are divided into destructive disorder, major depressive disorder, persistent depressive disorder (dysthymia), and premenstrual anxiety disorder, and the corresponding diagnostic points are given. It is of great clinical significance to distinguish the severity of depression in clinical practice, which can evaluate the severity of patients' illness and the probability of occurrence of risk events (such as suicide and self-injury), so as to provide a basis for doctors to choose appropriate treatment and preventive measures (Yuan Gang, 2021). In the search of mainstream databases such as Wanfang, Vipu and CNKI, it is common to use various depression rating scales to screen depression in different target populations. At present, there are many depression symptom assessment tools commonly used in clinical practice, and the scope of application of these tools varies. Different depression rating scales used by researchers can also lead to different research results (Zhang Hongyan, Xiao Weidong, 2006; Zhou Ping, Zhang Bin, Liu Lian-Qi, 2011; Liu QQ, Zhu Min, Su Caiyun et al., 2019).

2. Evaluation Tools

2.1. Self-rating scale

2.1.1. Beck Depression Inventory, BDI

As one of the most widely used self-rating scales for depressive symptoms, BDI has been used in the assessment of depressive symptoms in both various disease groups and the general population (Jiang Shuilin, Yang Wenhui, 2020). The first edition of the scale (BDI-I) was compiled by Baker Equals in 1961, and the Chinese version has been widely used in China

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(Zhang Yuxin, Wang Yan, Qian Mingyi, 1990). In 1996, Baker et al. revised BDI-I according to the DSM-IV diagnostic criteria for depression, in which the text of 18 items was modified, and the second version of the scale (BDI-II) was launched, which was quickly promoted and applied in clinical and research. It has been translated into several languages including Spanish, Japanese, and Persian (Penley, Wiebe & Nwosu, 2003). At present, the first version is still used in China. Due to the large differences in content and obvious differences in demarcation between the two versions, it is easy to cause confusion in the comparison with foreign depression-related studies. The scale has 21 questions, including depression, pessimism, failure, lack of happiness, guilt, punishment, self-loathing, self-blame and other 21 different symptoms; It is divided into three dimensions: cognitive-emotional symptoms (negative feelings such as pessimism and helplessness), physical symptoms (easy fatigue, poor sleep and other manifestations), and general symptoms (feeling that work is more difficult than before). Using a four-level scale, from 0 (none) to 3 (severe), each question is composed of four statements that rate the actual feeling that the time is "now" or "in the last week."

2.1.2. Self-Rating Depression Scale, SDS

SDS was compiled by Zung(1965) in 1965 and included 20 items, including 2 items for psychoaffective symptoms, 8 items for somatic disorders, 2 items for psychomotor disorders, and 8 items for depressive psychological disorders. Each item was composed of a 7-level score. The scale is easy to use, can directly reflect the subjective feelings of depressed patients, and is suitable for adults with depressive symptoms. According to the results of Chinese norm, the cut-off value of SDS standard score was 53 points, of which 53 ~ 62 were classified as mild depression, 63 ~ 72 as moderate depression, and \geq 73 as severe depression. At present, the relevant studies on SDS show that the correlation coefficients of the 20 items in the scale are all > 0.7. The retest reliability of each project ranges from 0.730 to 1.000, and Cronbach's α coefficient ranges from 0.782 to 0.784(Peng Hui, Zhang Yiying, 2014; Tian Yindi, Wang Yikai, 2019; Liao Juanjuan, Zheng Yannan, Huang Liangming, 2017).

2.1.3. Center for Epidemiological Studies Depression Scale, CES-D

CES-D was developed in 1977 by Radloff of the National Center for Mental Health (NIMH) for the screening of depressive symptoms. This is a widely used measurement tool for depressive symptoms, including 16 items describing negative emotions and 4 items describing positive emotions. Radloff obtained 4 dimensions after factor analysis using principal component analysis and variance maximum rotation method. They were somatization symptoms, depressive mood, positive mood and interpersonal problems (Radloff, 1977). This factor structure has been replicated and validated in different cultural contexts, strongly supporting the structural validity of the scale (Knight, Williams & Mcgee, 1997). In China, Ling Yu et al. proved that CES-D four-factor structure model is most suitable for high school students, with excellent discrimination validity, association validity and prediction validity, as well as good internal consistency reliability and retest reliability (Ling Yu, 2008). However, when using Project 20 CES-D to measure depression levels in certain groups (such as adolescents, the elderly, and clinical patients), researchers have found that long response times, high emotional load, and sensitivity to project content can lead to higher rejection rates (Kohout, Berkman & Evans, 1993).

2.2. Check Scale

2.2.1. Hamilton Rating Scale for Depression-17 items, HAMD-17

HAMD-17 has good reliability and validity in assessing the severity of depressive symptoms of subjects, and is regarded as the "gold standard". In clinical use, psychiatrists with certain clinical experience are required to consult and observe the scale, with a moderate number of items and clear operational evaluation criteria. High scores indicate high levels of depression

(Yang Xiaofan, Qi Na, 2021). According to the total score of HAMD-17 scale, the severity of depression was divided into mild depression (7-13). 14-19 divided into moderate depression; \geq 20 is classified as severe or above. The scale is applicable to adult patients with depressive symptoms, with a total of 17 items. Most items are scored with a grade of 0 (none) to 4 (very severe), and a few items are scored with a grade of 0 (none) to 2 (severe) to 3. The higher the score, the more severe the symptoms. The internal consistency of the scale was Cronbach α coefficient > 0.64, retest reliability and rater reliability > 0.97, and the validity of the assessment of depression was good (Xie Guong-Guong, Shen Qijie, Zhang Ji-tian, 1984).

2.2.2. Montgomery-Asberg Depression Rating Scale, MADRS

MADRS is a scale jointly developed by Montgomery of Guy Hospital in London and Asberg of Stockholm Research Institute. It is simpler than Hamilton Depression Scale, but sensitive to patient changes. This scale can reflect the effect of antidepressant treatment and monitor the changes of patients' conditions. A total of 10 questions were scored at 7 levels, ranging from 0 normal to 6 severe depression (Zhong Baoliang, Wang Ying, 2011). The contents of the questionnaire involved observed depression, main complaint of depression, inner tension, sleep loss, appetite loss, difficulty in focusing attention, laziness, inability to feel, pessimistic thoughts and suicidal thoughts, which had the best quality among similar scales and showed good sensitivity to treatment (Liu Lianqi, Zhou Ping, 2011).

2.3. Special Scales

2.3.1. Children's Depression Inventory, CDI

Depression is one of the major mental health problems in children and adolescents. In the past 30 years, scholars at home and abroad have paid attention to the study of depression in children and adolescents, which is a key stage in the development of depression. CDI is the most used self-rating scale for depression in children and adolescents in the world, and half of the studies on childhood depression abroad use CDI as a measurement tool. CDI was compiled by Kovacs and Beck in 1977 and is suitable for 7-17 years old, which can be said to be the extension of BDI to the lower age group (Chen Zhiyan, Yang Xiaodong, Li Xinying, 2007). A total of 27 questions, including 5 subscales: Negative emotions, interpersonal problems, inefficiency, anhedonia, and negative self-esteem have the outstanding advantage of having the lowest required reading level of all depression measurement tools (only a first grade reading level), The content of the project is also close to children's daily life, such as having no friends, unwilling to do homework, ugly, fighting, etc. (Fristad, Emery & Beck, 1997). The results show that the depression level of middle school students is significantly higher than that of primary school students. The depression level of boys in primary school is significantly higher than that of girls, while there is no significant gender difference in middle school students. CDI is basically suitable for measuring the depression level of children and adolescents in China (Liu Fengyu, 1997).

2.3.2. Edingburgh postnatal depression scale, EPDS

EPDS was developed by Cox Equal in 1987, specially used for postpartum depression screening scale, has good reliability and validity, and is widely used in foreign countries. After the scale was used in the clinic, a large number of studies showed that EPDS could be used not only for the screening of postpartum depression, but also for the screening of depression during pregnancy (Yang Qing, Zhao Shineng, Li Shuxuan, 2018; Li Mi, Tang Qing-Feng, Zhang Guo-Qin, 2016). There were 10 items in EPDS, including mood, fun, anxiety, self-blame, fear, insomnia, coping ability, sadness, crying and self-injury, with a score range of 0-30 points (Ding Hui, Chen Lin, Di Xiaolan, 2014). Internationally, the current progress in clinical research on postpartum depression is partly related to the compilation of a list of the best screening tables for postpartum depression, of which EPDS can be the main representative (Cox, 1987). Since its introduction, it has been translated into many languages and widely used because of its good

scale performance (Lee, 1998). EPDS has a very significant correlation with BDI and GHQ at each evaluation time point during pregnancy and childbirth, while BDI and GHQ have been proved to have good reliability and validity and have been widely used in a series of previous domestic and foreign studies, so EPDS has good parallel validity (Zhang Mingyuan, 1993). In addition, EPDS was concise and easy to understand, convenient to operate, and had good parallel validity and structural validity. Some studies suggested that its clinical boundary value for postpartum depression screening in Chinese women should be set at 9/10(Qiu Jian, Wang Zucheng, 2001).

2.3.3. The Geriatric Depression Scale, GDS

GDS was compiled by American psychologists Brinkt and Yesavage in 1982 and is widely used to measure the depression level of elderly people worldwide (Cheng & Chan, 2005). The scale has a total of 30 items, including the following symptoms: depression, reduced activity, irritability, withdrawal of painful thoughts, negative rating of the past, present and future, each item has two answers of "yes" or "no", the critical value of the scale is still questionable, and the total score of 0-10 is recommended for general screening purposes. 11-20 points mild depression; Moderate to severe depression at 21-30 points (Zhou Ying, Zhang Liming, 2021).

2.3.4. Hospital Anxiety And Depression Scale, HADS

Created by Zigmond and Snaith in 1983, HADS is used to screen anxiety and depression in patients in general hospitals through the self-evaluation scale of anxiety and depression. The original English version has been translated into various languages. As one of the psychological assessment scales widely used in clinical practice in recent years, the reliability and validity, especially the structural validity, are still controversial when applied in patients with different diseases (Liu Meili, Wang Wenru, 2009). Because HADS is convenient to operate and easy to master, it is not affected by age, gender, economic status and other factors, and has a wide range of applications. It is suitable for normal people of various occupations, cultural classes and age groups or all kinds of mental patients. Therefore, it is suitable for health examination centers to screen patients with suspected symptoms of anxiety or depression. It can be widely used as a screening tool (SUSIE, Liu Yuping, 2012). Studies have shown that the sensitivity, specificity and positive predictive value of SAS, SDS and HADS are very close, and their diagnostic efficacy is similar. Compared with SAD and SDA, which have 20 questions respectively, HADS with 14 questions is more suitable for busy physical examination work. Therefore, HADS can be used as a common screening tool in outpatient work, especially in physical examination (Zhou Jiong, Wang Yinhua, 2006).

2.3.5. Calgary Depression Scale for Schizophrenia - Chinese version, CDSS-C

CDSS-C is used to assess depressive symptoms associated with schizophrenia. A total of 9 items: depressive mood, feelings of hopelessness, self-debasement, guilt related ideas, pathological guilt, morning depression, early waking, suicide, observed depressive manifestations. All items 0 (none) - 3 (severe) Scale 4, the higher the score, the more severe the symptoms. The Cronbach α coefficient of internal consistency of the scale was 0.80, the investigator reliability was > 0.79, and the retest reliability was > 0.93, which had good validity for the evaluation of depressive symptoms in schizophrenia patients (Zhou Ping, Liu Lianqi, Zhang Bin, 2009; Li Huafang, 2014). CDSS-C can help clinicians better determine the presence and severity of depressive symptoms in Chinese patients with schizophrenia, better assess patient prognosis and possible suicide risk, and assist in determining whether to take intervention measures for depressive symptoms (Addington, Shah & Liu, 2014). At the same time, CDSS-C can provide a new therapeutic effect evaluation index for domestic psychiatric clinical trials (Liu Hao, Zhang Hongyan, Xiao Weidong, 2015).

3. Conclusion

The etiology and pathogenesis of depression have not yet been clarified, and clinical etiology diagnosis cannot be made, but diagnosis and differential diagnosis are made according to the characteristics and evolution of symptoms. Therefore, accurate and reliable diagnosis depends on comprehensive and objective medical history collection and systematic and thorough psychiatric examination. Psychological scale is a very effective and important means to detect patients with psychological disorders, but the main psychological scale used in China is imported from abroad, each scale has its application value, but no scale can dominate in application, still facing a variety of challenges, need to further study and compare the advantages and disadvantages of various scales. Select and use according to specific needs.

References

- [1] Chen Z Y, Yang X D, Li X Y. (2007). Self-assessment tools for depression in Chinese children and adolescents (Review). Chinese Journal of Mental Health, (06), 389-392.
- [2] Ding H, Chen L, Di X L. (2014). Expert consensus on prevention and treatment guidelines for postpartum depression disorder (based on obstetricians and community physicians). Chinese Journal of Obstetrics and Gynecology, 15 (6), 572-576.
- [3] Jiang S L, Yang W H. (2020). Factor structure of the 2nd Chinese version of Baker Depression Scale in Chinese college students. Chinese Journal of Clinical Psychology, 28(02), 299-305.
- [4] Li H F. (2014). Commonly Used Scale for Clinical Research on Psychotropic drugs, 2nd edition. Shanghai: Shanghai Science and Technology Education Press.
- [5] Li M M, Tang Q F, Zhang G Q, et al. (2016). Application status of postpartum depression assessment Scale in China. Chinese Journal of Mental Health, 30 (6), 418-423.
- [6] Liu F. Y. (1997). The structure of the Childhood Depression Scale and the characteristics of depression development in children and adolescents. Psychological Development and Education, (02), 58-62.
- [7] Liu Q, Zhu M, Su C Y, et al. (2019). The diagnostic value of WHO-5 happiness index and Baker Depression Scale for depression in patients with Parkinson's disease. Journal of Clinical and Experimental Medicine, 18(10), 1106-1109.
- [8] Liu M, Wang W R. (2009). Applicability of hospital anxiety and depression scale to patients with coronary heart disease. Shaanxi Medical Journal, 38(10), 1330-1332.
- [9] Liu H, Zhang H, Xiao W D, Liu Q, et al. (2015). Comparison of five depressive symptom assessment tools to assess depressive symptoms in patients with schizophrenia. Chinese Journal of Mental Health, 29(08), 570-575.
- [10] Ling Yu, Wei Yong, Yi JY, Xiao Jing, Yao Shuqiao. (2008). Factor structure of CES-D in high school students. Chinese Journal of Clinical Psychology, (03), 265-267.
- [11] Liao J J, Zheng Y N, Huang L M, et al. (2017). Application of PHQ-2-C, CES-D and BDI-II-C in screening adolescents for depressive disorders. International Journal of Psychiatry, 44(1), 23-25.
- [12] Peng Hui, Zhang Yiying, Ji Ying, Tang Weiqin, Li Qiang, Yan Xiaoling, Zhuang Qin. (2014). Reliability and validity analysis of the Chinese version of the self-rated depression scale for rural women. Shanghai Journal of Medicine, 34(14), 20-23.
- [13] Qiu J Y, Wang Z C, Luo L M, Mei L P. (2001). Clinical application of Edinburgh Postpartum Depression Scale. Shanghai Psychiatry, (04), 219-221.
- [14] Su Q, Liu Y P, Cheng Y F, Wang L, Hong M. (2012). Reliability and validity of hospital Anxiety and depression scale in health examination center. Sichuan Medical Journal, 33(01), 174-176.
- [15] Tian Yin-di, WANG Yi-kai, Li Jing, Wang Miaomiao, Dang Shuangsuo. (2019). Evaluation of the reliability and validity of anxiety and depression scales in the clinical application of patients with cirrhosis. Journal of Practical Hepatology, 22(01), 105-108.

ISSN: 1813-4890

- [16] Xie G G, Shen Q J, Zhang J T. (1984). Evaluation of Hamilton and Carrol depression scale in normal and depressed patients. Chinese Journal of Neuropsychiatric Disorders, 10(6), 346.
- [17] Yuan G, Zhao J, Zheng D, Liu B Y. (2021). Accuracy of self-rating depression Scale and Baker Depression Scale in distinguishing depression severity. Neurological Disorders and Mental Health, 21(12), 868-873.
- [18] Yang Xiao-fan, Qi Na, Feng Yuan, Zhu Xue-Quan, Wang Gang. (2021). Correlation between image cognition based psychological assessment and 17 items of Hamilton Depression Scale. Neuropathy and Mental Health, 21(04), 249-254.
- [19] Yang Q, Zhao S N, Li S H, et al. (2018). A cohort study on the relationship between maternal postpartum depression and early infant development. Chinese Journal of Public Health, 34 (4), 559-562.
- [20] Zhong B L, Wang Y, Chen H H, Wang H H. (2011). Reliability, validity and sensitivity of Montgomery-Eisenberg depression Scale in patients with major depressive disorder. Journal of Behavioral Medicine and Brain Sciences, (01), 85-87.
- [21] Zhang H Y, Xiao W D. (2006). Evaluating depressive symptoms in schizophrenia -- Calgary Schizophrenia Depression Scale. International Journal of Psychiatry, 33(1), 8-12.
- [22] Zhang Y X, Wang Y, Qian M Y. (1990). Reliability and validity of Beck Depression Scale. Chinese Journal of Mental Health, 4(4), 164-168.
- [23] Zhou J, Wang Y. (2006). Evaluation of anxiety and depression scale. Chinese Journal of Mental Health, (10), 665.
- [24] Zhou P, Liu L Q, Zhang B. (2009). Reliability and validity of the Calgary Schizophrenia Depression Scale (Chinese version). Chinese Journal of Mental Health, 23(9), 638-642.
- [25] Zhou P, Zhang B, Liu L Q. (2011). Calgary Schizophrenia Depression Scale. Journal of Neurological Disorders and Mental Health, 11(2), 200-203.
- [26] Zhou Ying, Zhang Liming, Wang Yidan, Wu Hongyi, Li Zheng. (2021). Study on the measurement index of apathetic subscale in geriatric depression scale. Chinese Journal of Modern Nursing, 27(28), 3854-3857.
- [27] Addington J, Shah H, Liu L, et al. (2014). Reliability and validity of the Calgary Depression Scale for Schizophrenia (CDSS) in youth at clinical high risk for psychosis. Schizophr Res, 153(1-3), 64-67.
- [28] Beck AT, Steer RA, Ball R. (1996). Comparison of Beck Depression Inventories -IA and -II in psychiatric outpatients. J Pers Assess, 67(3), 588-597.
- [29] Cheng ST, Chan ACM. (2005). Comparative performance of long and short forms if the geriatric depression scale in mildly demented Chinese. International of Journal of Geriatric Psychiatry, (20), 1131-1137.
- [30] Fristad MA, Emery BL, Beck SJ. (1997). Use and abuse of the Children's Depression Inventory. Journal of Counseling and Clinical Psychology, 65(4), 699-702.
- [31] Kohout FJ, Berkman LF, Evans DA, et al. (1993). Two shorter forms of the CES-D depression symptoms index. J Aging Health, 5(2), 179-193.
- [32] Knight RG, Williams S, Mcgee R, et al. (1997). Psychometric properties of the Centre for Epidemiologic Studies Depression Scale(CES-D)ina sample of women in middle life. Behav Res Ther, 35(4), 373-380.
- [33] McPherson A, Martin CR. (2010). A narrative review of the Beck Depression Inventory (BDI) and implications for its use in an alcohol-dependent population. J Psychiatr Ment Health Nurs, 17(1), 19-30.
- [34] Malhi GS, Mann JJ. (2018). Depression. Lancet, 392(10161), 2299-2312.
- [35] Osler M, Bruunsgaard H, Lykke MoNensen E. (2015). Lifetime socioeconomic position and depression: an analysis of the influence of cognitive function, behaviour and inflammatory markers. Eur J Public Health, 25(6), 1065-1069.
- [36] Penley JA, Wiebe JS, Nwosu A. (2003). Psychometric properties of the Spanish Beck Depression Inventory-II in a medical sample. Psychol Assess, 15(4), 569-577.

ISSN: 1813-4890

[37] Radloff LS. (1977). The CES-D Scale: A Self Report Depression Scale for Research in the General. Appl Psychol Meas, 1(3), 385-401.