



Review

Symptom screening scales for detecting major depressive disorder in children and adolescents: A systematic review and meta-analysis of reliability, validity and diagnostic utility



Emily Stockings^{a,*}, Louisa Degenhardt^a, Yong Yi Lee^b, Cathrine Mihalopoulos^c,
Angus Liu^a, Megan Hobbs^d, George Patton^e

^a National Drug and Alcohol Research Centre, University of New South Wales, 22-32 King Street, Randwick, New South Wales 2031, Australia

^b Queensland Centre for Mental Health Research (QCMHR), School of Population Health, University of Queensland, Herston Road, Herston, Queensland 4006, Australia

^c Deakin Health Economics Unit, Population Health Strategic Research Centre, Deakin University, 211 Burwood Highway, Burwood, Victoria 3125, Australia

^d Clinical Research Unit for Anxiety and Depression (CRUJAD), University of Newcastle, St Vincent's Hospital, 390 Victoria Street, Darlinghurst 2010, Australia

^e Centre for Adolescent Health, The Royal Children's Hospital, 50 Flemington Road, Parkville, Victoria 3025, Australia

ARTICLE INFO

Article history:

Received 26 August 2014

Received in revised form

28 November 2014

Accepted 29 November 2014

Available online 6 December 2014

Keywords:

Depression

Children and adolescents

Psychometrics

Validity

Psychiatric Symptom Rating Scales

Prevention

ABSTRACT

Background: Depression symptom screening scales are often used to determine a clinical diagnosis of major depressive disorder (MDD) in prevention research. The aim of this review is to systematically examine the reliability, validity and diagnostic utility of commonly used screening scales in depression prevention research among children and adolescents.

Methods: We conducted a systematic review of the electronic databases PsycINFO, PsycEXTRA and Medline examining the reliability, validity and diagnostic utility of four commonly used depression symptom rating scales among children and adolescents: the Children's Depression Inventory (CDI), Beck Depression Inventory (BDI), Center for Epidemiologic Studies – Depression Scale (CES-D) and the Reynolds Adolescent Depression Scale (RADS). We used univariate and bivariate random effects models to pool data and conducted metaregression to identify and explain causes of heterogeneity.

Results: We identified 54 studies (66 data points, 34,542 participants). Across the four scales, internal reliability was 'good' (pooled estimate: 0.89, 95% Confidence Interval (CI): 0.86–0.92). Sensitivity and specificity were 'moderate' (sensitivity: 0.80, 95% CI: 0.76–0.84; specificity: 0.78, 95% CI: 0.74–0.83). For studies that used a diagnostic interview to determine a diagnosis of MDD, positive predictive power for identifying true cases was mostly poor. Psychometric properties did not differ on the basis of study quality, sample type (clinical vs. nonclinical) or sample age (child vs. adolescent).

Limitations: Some analyses may have been underpowered to identify conditions in which test performance may vary, due to low numbers of studies with adequate data.

Abbreviations: ADIS-C, Anxiety Disorders Interview Schedule for Children; AUC, area under the curve; BDI, Beck Depression Inventory; BSI, Brief Symptom Inventory; BYI, Beck Youth Inventories; CBCL, the Child Behaviour Checklist; CDI, Children's Depression Inventory; CDRS-R, Children's Depression Rating Scale – Revised; CES-D, Center for Epidemiologic Studies – Depression Scale; CES-DC, Center for Epidemiologic Studies – Depression Scale for Children; CIDI, Composite International Diagnostic Interview; DAWBA, The Development and Wellbeing Assessment; DEPS-10, Depression Scale – Version 10; DICA-IV, Diagnostic Interview for Children and Adolescents – Version 4; DISC, The National Institute of Mental Health Diagnostic Interview Schedule for Children; DSM, Diagnostic and Statistical Manual; DSRS, Depression Symptom Rating Scale (DSRS); HADS, Hospital Anxiety and Depression Scale; ICD, International Classification of Diseases; KID-SCID, Structured Clinical Interview for DSM-IV disorders – Child version; Kinder DIPS, Diagnostisches Interview bei psychischen Störungen im Kindes- und Jugendalter [German]; K-SADS, Kiddie-Schedule for Affective Disorders and Schizophrenia; MDD, Major depressive disorder; MDI-C, Multi-score Depression Inventory – Children; MINI, Mini-International Neuropsychiatric Interview; MINI-KID, The Mini-International Neuropsychiatric Interview for Children; NPV, negative predictive value; PPV, positive predictive value; PRIME-MD, The Primary Care Evaluation of Mental Disorders; RADS, Reynolds Adolescent Depression Inventory; RCDAS, Revised Child Anxiety and Depression Scale; ROC, receiver operator characteristic; SBB-DES, The Self-Report Questionnaire–Depression [German]; SCAN, Schedules for Clinical Assessment in Neuropsychiatry; SCID, Structured Clinical Interview for Depression for DSM disorders; SCID-I, Structured Clinical Interview for DSM-IV Axis I disorders; SDQ, Strengths and Difficulties Questionnaire; SMFQ, Short Mood and Feelings Questionnaire; YSR, Youth Self-Report

* Correspondence to: National Drug and Alcohol Research Centre (NDARC), Building R3, 22-32 King Street, Randwick, New South Wales 2031, Australia. Tel.: +61 2 9385 1062.

E-mail address: e.stockings@unsw.edu.au (E. Stockings).

<http://dx.doi.org/10.1016/j.jad.2014.11.061>

0165-0327/© 2014 Elsevier B.V. All rights reserved.

Conclusions: Commonly used depression symptom rating scales are reliable measures of depressive symptoms among adolescents; however, using cutoff scores to indicate clinical levels of depression may result in many false positives.

© 2014 Elsevier B.V. All rights reserved.

Contents

1. Introduction	448
2. Methods	449
2.1. Search 1: identify symptom screening scales that are commonly used in childhood and adolescent preventative interventions for MDD	449
2.2. Search 2: identify evidence of reliability, validity and diagnostic utility of commonly used depression symptom screening scales used in childhood and adolescent preventative interventions for MDD	449
2.3. Primary outcomes: traditional psychometric properties and diagnostic utility	449
2.4. Risk of bias	450
3. Results	450
3.1. Search 1: identify commonly used depression symptom screening scales in childhood and adolescent preventative interventions for MDD	450
3.2. Search 2: identify evidence of reliability, validity and diagnostic utility of commonly used depression symptom screening scales used in childhood and adolescent preventative interventions for MDD	451
4. Risk of bias in included studies	451
5. Commonly used depression scales for children and adolescents	452
5.1. Children's Depression Inventory (CDI)	452
5.2. Beck Depression Inventory (BDI)	452
5.3. Center for Epidemiologic Studies Depression Scale (CES-D)	457
5.4. Reynolds Adolescent Depression Scale (RADS)	459
5.5. Overall judgement	459
6. Discussion	460
6.1. Limitations	460
7. Conclusions	461
Role of funding source	461
Conflict of interest	461
Acknowledgements	461
Appendix A. Supporting information	461
References	461

1. Introduction

Major depressive disorder (MDD) is the leading global cause of disability among young people aged 10–24 years, accounting for 8.2% of the global non-fatal disease burden (Gore et al., 2011). Approximately 3% of children and 6% of adolescents suffer current or recent depression (Costello et al., 2006). MDD in young people is associated with poor academic performance, substance abuse, attempted and completed suicide and an increased risk of suffering depression during adulthood (Birmaher et al., 1996; Brent et al., 1986). Despite the significant health burden associated with MDD, studies have suggested that less than 50% of youths seek mental health treatment for the condition (Reavley et al., 2010; Leaf et al., 1996). Valid and accurate screening tools for depression may assist clinicians in identifying MDD in youths, and may subsequently increase the rates of appropriate treatment and referral (Hosman et al., 2005; Andrews et al., 2002).

Given the significant health burden associated with MDD, there has been growing recognition of the need to develop programs aiming to prevent the onset of MDD during childhood and adolescence (Hosman et al., 2005; Andrews et al., 2002). Promisingly, the number of studies that have examined the efficacy of preventative interventions for MDD among children and adolescents more than doubled between 2004 and 2010 (Merry et al., 2004, 2011). Such interventions have typically been delivered in the school setting during regular classes by teachers or trained external facilitators (Merry et al., 2011). Given that routinely administering structured or semi-structured diagnostic interviews in schools can be costly and time consuming, many trials have

used categorical thresholds on MDD symptom screening scales, such as the Center for Epidemiologic Studies – Depression Scale (CES-D) (Radloff, 1977) as a proxy for a diagnosis of MDD (Merry et al., 2011). Evaluating the efficacy of preventative interventions using symptom screening scales is problematic in two ways. Firstly, symptom screening scales that impose a categorical threshold over a larger number of symptoms that are included in the DSM and the ICD can increase the number of cases that are identified compared to the cases where DSM or ICD diagnoses were applied (Ferrari et al., 2013).

Secondly, while the reliability, validity and utility of identifying cases of MDD using the CES-D and other symptom screening scales have been established in adult populations (Radloff, 1977), the same clinical thresholds have been applied among childhood and adolescent samples. No review has systematically examined whether the clinical thresholds identified in adult samples are reliable, valid or useful for identifying cases of MDD among children and adolescents. There is also no review that has quantitatively synthesised the traditional psychometric properties of symptom screeners for MDD among children and adolescents. Indeed, previous reviews examining the traditional psychometric characteristics of depression symptom screening scales among children and adolescents have been non-systematic and qualitative in nature, the most comprehensive of which were conducted more than a decade ago (Myers and Winters, 2002b, Brooks and Kutcher, 2001). The absence of robust data in support of applying the adult-derived thresholds for MDD when assessing for MDD among children and adolescents means that it is difficult to interpret the efficacy, effectiveness and efficiency of early-life preventative interventions for MDD meaningfully.

Download English Version:

<https://daneshyari.com/en/article/6231743>

Download Persian Version:

<https://daneshyari.com/article/6231743>

[Daneshyari.com](https://daneshyari.com)