Psychiatry Research 268 (2018) 323–327

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

How well does a wellbeing measure predict psychiatric 'caseness' as well as suicide risk and self-harm in adolescents?

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ARTICLE INFO

Keywords:
Wellbeing measures
SWLS
Psychiatric diagnosis
Adolescent wellbeing
Suicide risk

ABSTRACT

Screening for psychiatric disorders may be hampered by traditional measures that increase participant burden and elicit negative responses via denial and social desirability biases. This study examined the utility of a wellbeing measure to identify psychopathology and suicide risk in adolescent participants. 1,579 students from Sydney schools participated in a survey which assessed wellbeing using the Satisfaction With Life Scale (SWLS) as well as psychiatric disorders and suicide risk. Results showed that low scores on the SWLS discriminated adolescents who had experienced a psychiatric condition or suicidality from those not so assigned. Specifically, students with no psychiatric diagnosis yielded a mean SWLS score of 28.0 while for those assigned a diagnosis, mean scores ranged from 19.4–3.0 across the various psychiatric conditions. Students who reported any suicidal ideation yielded a mean SWLS score of 22.7, and those with a current suicidal plan yielded a mean score of 17.7. We derived SWLS cut-off scores for predicting psychiatric caseness and suicidality but established that they had low positive predictive power. The SWLS therefore appears to provide a limited proxy measure of the chance of a psychiatric disorder or psychological distress, and might usefully complement more direct measures of such states.

1. Introduction

The presence of psychiatric disorders and psychological morbidity is commonly screened for by measures assessing pathological symptoms, with representative measures over recent decades including the General Health Questionnaire (Goldberg and Hillier, 1979) and the K-10 (Kessler et al., 2002). A risk to such self-report measures is that their weighting to 'negative' features can elicit denial, as participants often fail to report accurately on sensitive topics, commonly reflecting the impact of widely recognized social desirability bias and denial biases. A theoretical converse option is to use a wellbeing screening measure to detect those low on wellbeing as a consequence of having a psychiatric condition or of psychological morbidity.

Wellbeing is defined as the evaluation of one's quality of life, and is generally considered to be multi-faceted in nature, consisting of affective and cognitive components (Diener, 2000). Affect refers to pleasant and unpleasant emotions, whereas the cognitive component refers to the cognitive sense of satisfaction with life. Widely used measures that assess wellbeing include the Satisfaction with Life Scale (SWLS; Diener et al., 1985), and the Personal Wellbeing Index (PWI; Cummins et al., 2003). Wellbeing and satisfaction with life are both core components of positive psychology.

While psychopathology is the focus of psychiatry, positive psychology examines optimal functioning. These two worlds could be considered antithetical and are rarely joined theoretically, although positive psychology techniques may be employed in managing those with psychiatric disorders. Life satisfaction and depression show a strong negative correlation and it is uncommon for individuals to be simultaneously depressed while satisfied with life (Headey et al., 1993). For example, studies have reported moderate to strong negative correlations between the SWLS and clinical measures of depression (Blais et al., 1989; Schimmack et al., 2004). Further, Arrindell et al., (1991) reported negative correlations between the SWLS and all of the symptom dimensions of the Symptom Checklist – 90 (Derogatis, 1977). Thus, it may be the case that poor wellbeing is associated with co-morbid psychopathology in some individuals. In this paper we report analyses utilising such a concept to examine for 'caseness' status and psychological distress in a sample of Australian senior high school students.

There have been two recent national mental health studies

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https://doi.org/10.1016/j.psychres.2018.07.034
Received 15 January 2018; Received in revised form 17 July 2018; Accepted 19 July 2018
Available online 23 July 2018
0165-1781/

quantifying rates of depression in young Australians, with reported 12-month prevalence rates ranging from 6.3% for those aged 16–24 years (Australian Bureau of Statistics, 2007) to 14.0% for those aged 16 to 17 years (Lawrence et al., 2015). Whilst not detailing lifetime prevalence rates, comparable studies from the USA report rates ranging from 15.5% in those aged 15 to 24 years (Kessler and Walters, 1998) to 24.0% for those aged 14 to 18 years (Lewinsohn et al., 1993).

As suicide continues to be a distinctive risk for young people during their teenage years (Bridge et al., 2006; Kõlves and De Leo, 2016; Tatman et al., 1993), and accounting for one-third of all deaths in Australia in those aged 15–24 years in 2015 (Australian Bureau of Statistics, 2015), its detection is a high priority. There have been mixed findings regarding the validity of many suicide assessment questionnaires, which tend to be lengthy and so add to participant burden (Tatman et al., 1993; Zalsman et al., 2016), and which may be particularly susceptible to eliciting denial responses. While not extensively researched, some studies have sought to predict suicide based on wellbeing questionnaires such as the SWLS (Koivumaa-Honkanen et al., 2001). In a large sample of high school students, those reporting poor satisfaction with life were more likely to experience suicidal ideation or behaviors (Bridge et al., 2006; Valois et al., 2004) while, conversely, high-risk students who felt satisfied with life expressed less suicidal ideation and behaviors (Thatcher et al., 2002). We therefore also examine the utility of a wellbeing measure in identifying those with past and current suicidal ideation and self-harm behaviors.

By examining a range of psychiatric disorders and expressions of psychological distress among a sample of Australian high school students we were able to examine for any impact on wellbeing. More importantly, we sought to establish cut-off scores on a wellbeing measure that would indicate risk of psychiatric and psychological morbidity.

2. Methods

2.1. Sample and survey details

Year 11 and 12 students from five schools in the north shore region of Sydney were invited to take part in a 'Psychological Health Survey' during the second half of 2016. The schools' principals informed parents about the survey and adopted an 'opt out' strategy whereby a parent could exclude their child from completing the survey. The final sample comprised 1579 students (792 females, 785 males, 2 non-specified), which equated to 88.9% of the potential 1776 students who were eligible to participate. Study non-completors comprised 197 students whose parents nominated the 'opt out' choice, as well as those absent on the survey day, and those who chose not to complete the form during the scheduled class. An additional 13 students were excluded from the analyses due to not completing the wellbeing measure questions or returning a blank survey booklet.

Students were invited to complete the self-report booklet which assessed wellbeing, the prevalence of several psychiatric conditions (i.e. mood and anxiety disorders) as well as expressions of psychological distress (i.e. suicidal ideation, self-harm).

2.2. Measures

For quantifying wellbeing we used the Satisfaction With Life Scale (SWLS), a self-report measure that generates a global life satisfaction score (Diener et al., 1985). The SWLS consists of five positively framed questions with seven possible rating options ranging from 'strongly agree' to 'strongly disagree'. The score range is 5–35, and with high scores reflecting greater satisfaction. Studies have shown the SWLS to have strong internal reliability among adults (r = 0.87; Diener et al., 1985) and adolescents (0.78; Neto, 1993), as well as temporal stability among adults (Diener et al., 1985). Its construct validity among adolescents has also been supported with appropriate correlations found with related variables (Neto, 1993).

Psychiatric conditions were assessed with screening and subsidiary questions based on DSM-5 criteria in the main, allowing us to generate depression and anxiety disorder diagnoses. Those who scored as meeting DSM-5 criteria for major depression were sub-divided into melancholic and non-melancholic depressive sub-sets by use of the Sydney Melancholic Prototype Index (SMPI; Parker et al., 2013). The SMPI is a 24-item measure designed to differentiate between the two depressive sub-sets, with the self-report version showing a positive predictive value (PPV) of 70%, and with sensitivity and specificity coefficient of 0.69 and 0.77 respectively (Parker et al., 2013).

For diagnosing bipolar disorder, we included the Mood Swings Questionnaire (MSQ; Parker et al., 2012), a 27-item measure designed to improve detection of the bipolar disorders. In a development study (Parker et al., 2012), the MSQ was quantified as having a PPV of 91% in differentiating bipolar from unipolar depressive disorders. As those with bipolar disorder generally experience melancholic depressive episodes we limited a diagnosis of bipolar disorder to those who scored positive on the MSQ and who also scored as having a melancholic depression on the SMPI.

Suicide risk and self-harm were assessed by seven questions developed by the authors (and in collaboration with the school counsellors) to assess suicide ideation and plans as well as suicidal and deliberate self-harm acts. Questions targeted two time periods (ever and in the last year), as well as there being any current suicidal plan (i.e. "Have you ever thought about suicide?" and "Have you done so if the past 12 months?").

2.3. Ethics approval

The study was approved by the University of New South Wales Human Research Ethics Committee (HC16336).

2.4. Statistical analysis

Whilst SWLS scores are generally categorised into six classes, we judged this number as too many of necessity and therefore divided our sample into low, average and high satisfaction groups with the 'low' and 'high' groups defined by scoring less or more respectively than one standard deviation from the derived SWLS sample mean. Odds ratios (OR) for quantifying the impact of psychiatric illnesses as well as suicide risk and self-harm on SWLS scores were calculated using binary logistic regression.

Receiving Operating Characteristic (ROC) analyses were performed to determine a cut-off score on the SWLS that indicates risk to psychiatric 'caseness' (any diagnosis) as well as specific disorders, as well as a cut-off score indicating risk to suicide ideation and/or self-harm behaviors. The positive predictive value (PPV) (i.e. the ability of the-cut off score to accurately classify the presence of the condition) was calculated for the presence of each of the psychiatric disorders as well as for each of the suicide questions using the two determined cut-off scores respectively. Negative predictive values (NPV), sensitivity and specificity values were also calculated.

3. Results

The sample returned a mean SWLS score of 25.8 (6.1). Therefore our three 'satisfaction groups' were defined by following scores: 19 and below defined 'low satisfaction' ; 20 – 32 defined 'average satisfaction'; and 33 – 35 defined 'high satisfaction' sub-groups. Approximately 90% of students who reported 'low satisfaction' with life either met criteria for a psychiatric diagnosis or endorsed at least one of our suicide ideation or behavior questions. Further, these students were at 70% greater risk of meeting criteria for major depressive disorder and 50% increased risk of general or social anxiety disorders relative to those not in the 'low satisfaction' group.