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Review article

Identifying and differentiating melancholic depression in a non-clinical sample

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ABSTRACT

Background: Differentiating melancholic and non-melancholic depressive disorders and evaluating whether they differ categorically or dimensionally has had a lengthy history, but has not previously been evaluated in a non-clinical adolescent sample.

Methods: We studied a sample of 1579 senior high school students and evaluated the capacity of the Sydney Melancholia Prototype Index (SMPI) to differentiate melancholic from non-melancholic depression, both using a 'top down' strategy of imposing a pre-established cut-off score and a 'bottom up' strategy of employing latent class analyses.

Results: The two strategies respectively generated prevalence figures of 3.4% and 8.1% of the students having experienced a melancholic depressive episode and with the difference reflecting the LCA assigning some students who did not reach the pre-established cut-off score for the SMPI in the putative melancholic class. The principal latent class analysis failed to generate pristine melancholic and non-melancholic depressive classes, in that it also generated an 'intermediate' as well as a non-clinical depressive class. Both SMPI strategies identified similar symptoms—such as anhedonia and anergia—and several illness correlates that best differentiated those assigned melancholia status, and both strategies confirmed melancholia assignment being associated with factors indicative of more severe depressive disorders and of likely melancholic depression.

Limitations: Data were assessed by self-report only, only lifetime depression was assessed, and no other depressive diagnostic validating measure was administered.

Conclusions: The SMPI appears capable of identifying and differentiating melancholic from non-melancholic depression in a non-clinical adolescent sample.

1. Introduction

Melancholia has been variably viewed dimensionally (i.e. as a more severe expression of clinical depression) or categorically (i.e. as a separate depressive 'type'), the respective so-called 'unitary' and 'binary' models. We have argued for the latter (Parker and Hadzi-Pavlovic, 1996) based on melancholia showing (i) a degree of specificity of several symptoms and signs, (ii) a greater relevance of genetic and biological rather than psychosocial factors, (iii) a selective response to physical treatments rather than to a psychotherapy and (iv) a low placebo response rate.

Proponents of the unitary model, however, argue that there is not enough convincing empirical evidence that melancholia is a separate depressive type. Thus, DSM-5 accords melancholia 'specifier' status as against it being a subtype, with the latter defined as capturing "mutually exclusive and jointly exhaustive phenomenological" subgroups (APA, 2013, p. 21).

In our own attempts at developing a measure of melancholia we initially focused on signs of psychomotor disturbance and developed the 18-item CORE measure (see review by Parker and McCraw, 2016) and demonstrated its superiority to historically weighted endogeneity symptoms. Later, recognizing that not all patients present to the clinician at the nadir of their episode (and thus risking compromising valid CORE ratings) and, secondly, that psychomotor disturbance is less severe and distinctive in younger patients with melancholia, we returned to deriving a set of discriminating symptoms. In one study (Parker et al., 2010) we refined a set of 14 severity-based symptoms and showed that those so assigned as having a melancholic as against a non-melancholic depression did differ across a range of validators. The refined symptom set had, however, only a modest overall classificatory rate of 68%.

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When we then included a set of non-symptom illness correlates, classification improved to 80%. This led us to develop a composite measure of symptoms and course of illness variables, initially named the SERDEX (Parker et al., 2012) measure and subsequently named the Sydney Melancholia Prototype Index (SMPI). It lists 12 symptom and illness correlate items weighted to melancholic depression in a left-hand column and 12 weighted to non-melancholic depression in a right-hand column, and respondents (self-report measure) or clinicians (clinician-rated measure) are required to tick all relevant items from each column. By design, it assesses the prevalence of clinical features and correlates and is not a severity measure.

In one study (Parker et al., 2013a), a ROC analysis identified that a 'difference' score of 4 or more left column items being affirmed compared to the right column discriminated clinically diagnosed melancholic and non-melancholic patients with moderate to high accuracy (i.e. sensitivities of 0.69 and 0.84 and specificities of 0.77 and 0.92 for the respective self-report and clinician-rated measures), and with such diagnostic allocations supported by reference to a number of validators. In a subsequent study (Parker et al., 2013b) using the same cut-off score, SMPI-assigned melancholic (as against non-melancholic depressive) assignment was associated with a greater number of validating variables than for DSM-IV assignment of such depressive sub-types. Thus, the SMPI appears to have impressive properties in allocating clinically depressed subjects as having a melancholic or non-melancholic depressive condition.

In this paper we report a study seeking to (i) determine SMPI items best differentiating melancholic from non-melancholic depression and (ii) examine whether SMPI items supported a categorical distinction between the two types of depression in an adolescent sample.

2. Methods

2.1. Sample

1776 students in their final two years of high school and attending five private schools in Sydney were invited to undertake a survey assessing psychiatric symptoms. An 'opt out' strategy was imposed whereby students' parents could decline participation by their child.

2.2. Materials and procedure

Students completed a structured questionnaire during a scheduled class period. The survey included demographic questions followed by questions capturing DSM-5 criteria for a lifetime major depressive episode (MDE). Students were also asked about any family history of a mood disorder, if they had ever experienced self-harm and suicidal issues, as well as whether they had accessed any of 12 listed help-seeking strategies, received a diagnosis of depression from a health professional or received treatment (and what type) for any depressive episode.

In assessing depression, we first defined a "depressed mood" (i.e. as "feeling significantly down, with a drop in self-worth and self-value" and which might last for a few hours to months or longer). Students were then asked a series of questions to determine if any such depressed mood state met DSM-5 (symptom, duration and impairment) criteria for a major depressive episode.

Only those students who affirmed having experienced a depressed mood state were requested to complete the SMPI (see Table 1 for the full version of the SMPI measure).

2.3. Analyses

Latent class analyses (LCAs) were fitted using Mplus Version 8 (Muthén and Muthén, 2017). We used 800 random starts for model comparison, and 200 bootstrap draws for the BLRT (parametric bootstrapped likelihood ratio test) reported in Table 3 shortly. All other analyses were completed using IBM SPSS Statistics 23.

3. Results

There were 197 students who did not the complete the study because (i) their parents had 'opted out', (ii) they were absent on the survey day or (iii) they left their survey blank. Study completers therefore comprised 1579 students (88.9% of the eligible students; 792 females, 785 males, 2 non-specified) with a mean age of 16.9 years. 1275 (80.8%) were born in Australia, and asked indirectly about ethnicity, 404 (25.6%) affirmed that they identified with a "culture other than mainstream Australian culture", with the alternate culture most often nominated being Chinese (8.2% of participating students).

Of the students completing the questionnaire, 999 (63.0%) admitted to having experienced a depressed mood. Their lifetime prevalence rate for meeting criteria for a unipolar major depressive episode (MDE) was 41.9% (26.9% of the whole sample), and significantly higher ($\chi^2 = 35.7$, $p < 0.001$) in the females (33.5%) than in the males (20.1%). Of those meeting MDE criteria, the SMPI measure assigned 53 or 12.9% (3.4% of the whole sample, comprising 4.4% of the females and 2.3% of the males) as having a melancholic depressive condition and 359 or 87.1% (22.7% of the whole sample, comprising 28.2% of the females and 17.2% of the males) as having a non-melancholic depression, and with both assigned diagnoses evidencing a significant female preponderance.

Table 2 reports the prevalence of item affirmation in those assigned by the SMPI as having a melancholic or a non-melancholic depression, with each item's degree of differentiation quantified by use of the odds ratio and confidence interval statistics. All items from the left-hand SMPI column were more likely to be affirmed by the assigned melancholic than the non-melancholic participants, with the most differentiating items being consummatory anhedonia, anticipatory anhedonia and low energy. Conversely, all items from the right-hand SMPI column were more likely to be affirmed by the assigned non-melancholic than the melancholic participants, with the most differentiating items there being a precipitant to depressive episodes and the participant being able to look forward to things (i.e. a lack of anticipatory anhedonia). The only items that did not significantly differentiate the two groups were ones from each column inquiring into difficulties in childhood (i.e. "I don't think that my early years were any more difficult—when compared to most people" from the left-hand column and "In childhood and early adolescence, I experienced more stressful events and major difficulties… than most other people" from the right-hand column).

We then undertook a series of latent class analyses of all 24 SMPI items using data from 952 of the 999 students who affirmed having experienced a depressed mood (as SMPI data from the 47 remaining students were incomplete or missing). Our objective was to determine if there was support for the binary model (i.e. there would be two separate putative melancholic and non-melancholic classes identified) as well as a residual non-clinical class of those who had simply experienced a depressed mood. The identification of two clinical classes would allow us to again examine for those SMPI items providing the greatest differentiation of melancholic and non-melancholic depression. We imposed two-class, three, four and five-class solutions. The statistics in Table 3 address whether the number of classes fitted in a model represents an improvement over the model with one class fewer. The SSA-BIC statistics indicates no improvement when its value is greater than the preceding value. By this criterion we would have fitted six or more classes. For the other three statistics a non-significant p value indicates no improvement. By the VLMR and LMR statistics we could have imposed a maximum of three classes. The low values for VLMR and LMR when comparing five versus four classes cast some doubt over the four-class model. Nevertheless, we retained four classes on the basis of these statistics and partly on interpretation of the classes, and it is shown in Fig. 1.

Class 4 ($n = 127$, representing 13.9% of the sample analysed, and 8.1% of the whole student sample) appeared to clearly capture those