Research report

Enhancing depression screening to identify college students at risk for persistent depressive symptoms

Ryan M. Hill [a,*], Ilya Yaroslavsky [b], Jeremy W. Pettit [a]

[a] Department of Psychology, Florida International University, United States
[b] Department of Psychology, Cleveland State University, United States

ABSTRACT

Background: Depressive symptoms in college students are prevalent and are associated with considerable academic impairment. Many universities have implemented depressive symptom screening programs and the number of students identified as in need of services following screening greatly exceeds available mental health resources. The present study sought to refine depressive symptom screening programs by identifying predictors of a persistent course of depressive symptoms and developing cut-scores for accurately identifying students who will experience a persistent symptom course.
Method: Students ($n=262$) who reported elevated depressive symptoms both an initial screening and baseline assessment ($n=150$) were invited to participate in telephone-based follow-up assessments 4, 8, and 12 months post-baseline.
Results: Two depressive symptom courses were identified: a persistently elevated depressive symptoms course and a decreasing depressive symptoms course. Baseline social disconnection and negative feedback-seeking both significantly predicted membership in the persistently elevated depressive symptoms course. Cut-scores that robustly discriminated between the two symptom courses were identified.
Limitations: The present sample was predominantly female and Hispanic; the four-month spacing of assessments may have resulted in a failure to identify individuals who experience brief, yet impairing, recurrent depressive episodes.
Conclusion: These findings can inform approaches to identifying college students most in need of mental health services for depressive symptoms based on the presence of social disconnection and/or negative feedback-seeking. Screening cut-points on social disconnection and negative feedback-seeking measures can reduce the number of cases identified as needing mental health services while retaining the majority of cases who will experience a persistent depressive symptom course.

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1. Introduction

The point prevalence rate of Major Depressive Disorder (MDD) among college students has been estimated at 5.2% (Eisenberg et al., 2007). Further, 43.2% of college students in the United States reported feeling so depressed that it was difficult to function at least once in the previous 12 months (American College Health Association, 2008). In addition to causing personal distress, depressive symptoms in college students are associated with considerable academic impairment (Deroma et al., 2009; Heiligenstein et al., 1996).

1.1. Depression screening programs for college students and overburdened mental health centers

Given the high rate of depressive symptoms and associated impairment among college students, colleges and universities have developed and implemented depression screening programs to identify students in need of mental health services and provide appropriate follow-up evaluations or prevention and treatment resources (Garlow et al., 2008; Voelker, 2003). These depression screening programs have resulted in an increased demand for evaluation and treatment on already overburdened university mental health centers (Voelker, 2003). Identification of possible "cases" in depression screening programs has exacerbated the

imbalance between the demand for mental health services and the ability of campus mental health centers to provide those services.

One strategy to reduce the imbalance would be to expand the number of mental health service providers at campus mental health centers, which would require greater investments of resources by universities. An alternative strategy would be to refine screening strategies so as to identify a smaller number of cases in need of further evaluation and possible treatment. As will be elaborated below, many college students who screen positive for depressive symptoms will experience transient periods of distress that are likely to dissipate without mental health services (Goncalves et al., 2012). A smaller number of college students who screen positive for depressive symptoms will experience persistent and impairing levels of depression. Students in the latter group represent ideal candidates for referral to campus mental health services.

The purpose of the present study was to identify variables that predicted which college students who screen positive for elevated depressive symptoms would experience a persistent course of depressive symptoms over a one-year period. With these variables in hand, depression screening programs can be tailored to identify a subset of cases who are most in need of mental health services, reducing the burden on campus mental health centers while also making treatment available to those who are most in need.

1.2. Depressive symptoms in college students: evidence of heterogeneous courses and predictors of a persistent course

Past research among college students indicates heterogeneity in the course of depressive symptoms. For example, in a study of depressive symptom maintenance in 117 college students who screened positive for depressive symptoms, only 32 (27.3%) continued to screen positive for depressive symptoms two years later (Zivin et al., 2009). Similarly, a study of 262 college students assessed 12 weeks apart showed some students reported increases in depressive symptoms while other students reported decreases over this period (Goncalves et al., 2012). These findings among college students mirror findings on the heterogeneous courses of depressive symptoms among adolescents, emerging adults, and young adults (Pettit et al., 2010; Stoolmiller et al., 2005; Yaroslavsky et al., 2013).

Existing depression screening programs identify individuals with currently elevated symptoms, and thus likely identify individuals who will go on to experience both persistent and non-persistent courses of depressive symptoms. Theories of depressive symptom maintenance can inform the selection of variables that are likely to distinguish between persistent and non-persistent courses. The interpersonal theory of chronic depression (Pettit and Joiner, 2006) posits that excessive reassurance-seeking and negative feedback-seeking have a deleterious impact on interpersonal relationships and social functioning, which contributes to the persistence of depressive symptoms. Excessive reassurance-seeking is a tendency to persistently seek confirmation from others that one is loved and worthy, even when such assurance has already been provided (Joiner et al., 1999). Negative feedback-seeking is a tendency to request or value negative social evaluations of oneself because they are congruent with one's own negative self-views (Pettit and Joiner, 2001). The interpersonal theory also posits that low social support (i.e., poor interpersonal belongingness) contributes to depressive symptom persistence. A large body of empirical work provides support for concurrent and prospective associations between depressive symptoms and excessive reassurance-seeking, negative feedback-seeking, and social support (Evraire and Dozois, 2011; Pettit et al., 2011; Starr and Davila, 2008). In addition to the interpersonal theory, response styles theory proposes that a tendency toward

rumination, or repetitively focusing on one's dysphoric mood and the causes of that mood, contributes to the persistence of depressive symptoms (Nolen-Hoeksema, 1991). Research has demonstrated an association between rumination and depressive symptoms course (Hilt et al., 2010; Nolen-Hoeksema, 1991).

1.3. The present study

The purposes of the present study were to identify distinct courses of depressive symptoms over a 12-month period among college students who screened positive on a depression symptom measure and to examine predictors of those courses. A two-phase screening process was used, intended to mimic a general depression screening approach (Mackenzie et al., 2011) followed by a more in-depth assessment prior to service utilization. Students first completed a brief depressive symptoms screen and those who reported elevated symptoms were invited to participate in a more in-depth assessment. Students who reported elevated symptoms at the in-depth assessment were re-assessed at three subsequent evaluations over a one year period.

Consistent with previous research (Zivin et al., 2009) it was expected that a subgroup of students would demonstrate a persistently elevated symptom course and that a second subgroup would demonstrate a course of decreasing symptom severity. Based on the interpersonal theory and response styles theory, it was expected that levels of excessive reassurance-seeking, negative feedback-seeking, social support, and rumination would significantly distinguish students in the persistently elevated subgroup from students in the decreasing severity subgroup. Significant predictors of subgroup membership were then examined to derive the optimal cut points for identifying members of the persistently elevated subgroup.

2. Method

2.1. Participants and procedures

Prior to conducting this study, all procedures were approved by the appropriate Institutional Review Board. Participants ($n=1079$) were recruited from an undergraduate psychology pool. All participants provided written informed consent after the nature of the study was explained. Participants first completed a screening phase in which they were administered the Center for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977); those who reported moderate to severe depressive symptom scores (a CES-D score ≥ 20) were invited to participate in an in-depth assessment one week later. Consistent with recent studies on depression prevention programs, a score of ≥ 20 on the CES-D was used (Stice et al., 2010), as this score has higher sensitivity for identifying probable major depressive disorder than other recommended cut scores (Roberts et al., 1991).

Two-hundred sixty-two students (24.3%) screened positive and were invited to the baseline assessment. Of those invited to the baseline, 218 (83.2%) completed the assessment. At baseline assessment, those who again screened positive (a CES-D score ≥ 20; $n=150$) were invited to participate in telephone-based follow-up assessments 4, 8, and 12 months post-baseline. Of the 150 students invited to participate in the follow-up assessments, 123 (82.0%) completed the 4-month follow-up, 109 (72.7%) completed the 8-month follow-up, and 90 (60.0%) completed the 12-month follow-up.

Participants were offered course credit for participation in the screen and baseline assessments and $10 gift cards for participation in each of the follow-up assessments. There were no significant differences between those who completed follow-up