



## Efficacy of an indicated intervention program for Indian adolescents with subclinical depression

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### ABSTRACT

Subclinical depressive symptoms in adolescents are associated with a host of impairments and constitute a risk factor for future depression. The aim of the present study was to study the efficacy of a school-based group coping skills program for Indian adolescents with subclinical depression. Adolescents ( $n = 120$ ) across two schools comprised the intervention and control groups and were assessed at baseline, post-intervention, and 3 months no-contact follow-up. The intervention group adolescents received the 8-weekly Coping Skills program in same-gender groups of 4–8 adolescents each, and the control group adolescents received one interactive psycho-educatory session. The intervention group evidenced clinically significant reductions in depressive symptoms, negative cognitions, and academic stress, and increased social problem solving and coping skills, at both post-intervention and follow-up. With regard to moderators, initial levels of depressive symptoms and homework compliance were found to partially moderate the effect of intervention. No effects were found for parental depression, gender, and age. The present study calls for future development and implementation of programs to address subclinical psychopathology among adolescents in Indian schools.

### 1. Introduction

It is being increasingly recognised that depression constitutes a substantial problem among adolescents in India (Nair et al., 2004). Even subclinical depression has been found to have a high prevalence (Singhal et al., 2016), bringing with it impairments in academic, social, and familial arenas, as well as cognitive and emotional difficulties for the adolescent. Subclinical depressive symptoms constitute a significant risk factor for adult depression (Fergusson et al., 2005). Thus, the treatment of depressive symptoms, even at subclinical levels, is a worthwhile goal with important clinical implications. It will also help bridge the treatment gap that exists, given that a majority of depressed adolescents do not receive treatment (Weersing and Weisz, 2002) because their symptoms are attributed to mood swings, or they do not know where or how to find appropriate help, or are reluctant to seek help due to social stigma and peer rejection (Crisp et al., 2006).

Numerous school-based cognitive-behavioural indicated programs have been devised for adolescents with elevated depressive symptoms to overcome many of these obstacles. These ‘early intervention’ programs support reducing the risk of further depressive episodes (e.g., Arnarson and Craighead, 2011; Garber et al., 2009; Stice et al., 2008), as well as producing positive outcomes in coping (e.g., Lowry-Webster

et al., 2001), attributional style (e.g., Horowitz et al., 2007), personal adjustment (sense of inadequacy and self-esteem; e.g., McCarty et al., 2013), problem solving (e.g., Spence et al., 2003), and anxiety (e.g., Lowry-Webster et al., 2001).

Although indicated programs have been found to reduce depressive symptoms, it is important to test whether the effects vary across cultures. Indicated programs may be more effective in the Indian context because Indian adolescents report higher scores of depression than their Western counterparts (Upmanyu et al., 2000) and depression prevention programs typically produce larger effects for higher-risk participants (Horowitz and Garber, 2006; Stice et al., 2009).

The present study, therefore, aimed to evaluate a school-based cognitive-behavioural indicated program for adolescents with subclinical depression in the Indian context. Apart from the risk factors that have been addressed in the Western studies, we also included ‘academic stress’ due to its salience in the Indian context (Deb et al., 2010, Singhal et al., 2016).

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## 2. Method

### 2.1. Study design and sample

The study had two-fold objectives: (1) to examine the efficacy of a school-based group coping skills program for adolescents with sub-clinical depression on depressive symptoms, negative cognitions, academic stress, social problem solving, and coping skills; and (2) to examine the role of the following in moderating the outcome of the intervention: initial levels of depressive symptoms, parental depression, gender, and homework completion.

A two-group comparison design with repeated baseline assessments was used. Schools were randomly assigned to intervention or control group, to avoid contamination effects.

Grade 8, 9, and 11 students (ages 13–18 years) belonging to English-medium co-educational schools of a large metropolitan Indian city were included in the study. One hundred and twenty students across two schools identified as having sub-clinical depression (within the range 14–24 on CDI; see Singhal et al., 2016) comprised the intervention (n = 65) and control (n = 55) groups.

### 2.2. Procedure

The study was carried out from January 2012 to December 2013. The students of the school assigned to the intervention condition were divided into ten same-gender groups of 4–8 students each and administered pre-intervention assessments (T1). Each group was then delivered the 8-weekly intervention called the Coping Skills Program devised by the authors (see Singhal et al., 2014). The students of the school assigned to the control condition were, for ethical reasons, engaged in one 40–45 min (one free period) of interactive psycho-educational session in ten groups of 4–8 students each.

At completion of the program, the intervention group was assessed (T2), and again after a 3-month no-contact interval (T3). The control group was similarly assessed within the same period as the intervention group.

The following measures were employed: (1) Sociodemographic Data Sheet (SDS): This tool was developed by the researcher for the purpose of the present study and included information about socio-demographic characteristics, such as birth date, gender, family set-up, etc. as well as items eliciting information about the exclusion criteria; (2) Children's Depression Inventory (CDI; Kovacs, 1992): It is the most commonly used self-report measure of intensity of depressive symptoms for individuals aged 7–17 years. The Cronbach's alpha of CDI for our sample was high ( $\alpha = 0.81$ ), indicating a high level of internal consistency for this scale for the current sample; (3) Centre for Epidemiological Studies-Depression Scale for Children (CES-DC; Weissman et al., 1980): It assesses frequency of depressive symptomatology experienced over the past week; (4) Children's Automatic Thoughts Scale (CATS; Schniering and Rapee, 2002): It is a developmentally sensitive, self-report measure of negative self-statements across both internalising and externalising problems; (5) Scale for Assessing Academic Stress (SAAS; Sinha et al., 2001): Developed for grade 8–12 students of English-medium schools with students belonging to middle to higher socio-economic background, this scale assesses five major indicators of academic stress; (6) Social Problem Solving Inventory (SPSI-R; D'Zurilla et al., 2002): It assesses functional and dysfunctional cognitive and emotional orientations toward solving life problems; and (7) Adolescent Coping Orientation to Problems Experienced Inventory (ACOPE; Patterson and McCubbin, 1991): it requires adolescents to indicate how often they use a specified coping behaviour when they 'face difficulties or feel tense'. For details of the measures and the intervention program, see Singhal et al. (2014). The flowchart for the procedure is provided in Fig. 1.

## 3. Results

### 3.1. Comparison on socio-demographic and baseline variables

The intervention and control groups did not differ in their composition by grade [ $\chi^2(2) = 0.18$ ,  $p = 0.91$ ], gender [ $\chi^2(1) = 0.04$ ,  $p = 0.84$ ], birth order [ $\chi^2(2) = 3.99$ ,  $p = 0.13$ ], and age [ $t(118) = -0.24$ ,  $p = 0.81$ ]. They also did not differ by fathers' age [ $t(100) = 1.42$ ,  $p = 0.15$ ] and mothers' age [ $t(103) = 0.80$ ,  $p = 0.42$ ].

The intervention group had significantly more fathers educated up to Grade 12 and control group had significantly more fathers educated up to graduation [ $\chi^2(2) = 10.22$ ,  $p = 0.006$ ]. There was no difference between the intervention and control groups by family type (nuclear and joint/extended) [ $\chi^2(1) = 1.63$ ,  $p = 0.20$ ], and by parents' depressive symptom scores [fathers  $t(58) = -1.4$ ,  $p = 0.16$ , and mothers  $t(94) = 1.2$ ,  $p = 0.23$ ].

Comparison between intervention and control groups at T1 indicated that the two groups did not differ significantly on each of the measures at baseline.

### 3.2. Comparison between intervention and control groups on outcome measures

Comparison between the intervention and control groups at post-intervention (T2) and follow-up (T3) assessments was done using repeated measures analysis of covariance (ANCOVA), with father's education level as covariate (Table 1). However, the pattern of results did not change even when fathers' education level was not included as a covariate. Table 1 also displays the partial eta squared values for each variable.

### 3.3. Effect size

All the variables were found to display large effect sizes (ESs) at both post- and follow-up assessments (Table 2). Also, Cohen's  $d$  increased from T2 to T3 for all the measures, indicating an increase in treatment effect from post to follow-up assessment for the intervention group.

### 3.4. Analysis of clinical significance

Analysis of clinical significance was calculated using a two-step criterion by Jacobson and Truax (1991). Table 3 shows the percentage of adolescents in intervention and control groups who fulfil Reliable Change Index (RCI) criterion at the post-intervention and follow-up assessments.

The percentages of adolescents in intervention and control groups who fell in each of the clinical change categories are presented in Table 4. A majority of adolescents in the intervention group (75–80%) achieved recovery on all measures. 13–63% evidenced improvement and 3–22% achieved a functional status in the intervention group. None of the adolescents showed clinically significant deterioration in either group. A majority of participants in the control group remained unchanged (90–97%). Chi-square analyses for individuals meeting criteria for reliable change shows the superiority of intervention group in comparison with the control group on indices of recovery, improvement, and functionality (Table 4).

### 3.5. Moderator analysis

The following were hypothesized to be predictor variables: pre-intervention depressive symptoms, parental depression, gender, and homework completion.

#### 3.5.1. Pre-intervention depressive symptoms

This was defined in two ways: (a) T1 CDI scores, and (b) CDI scores

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