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Adolescent Self-Esteem and Cognitive Skills Training: A School-Based Intervention

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We developed and evaluated a school-based psychosocial prevention program for adolescents, focusing on self-esteem, negative cognitive processes, and peer isolation. Fifty-one tenth-grade students between the ages of 13–16 were recruited and randomly allocated to one of three groups; Social Cognitive Training group (SCT), Attention Placebo Comparison Group (APC) and a Waitlist Control group (WL). A pre-post design using two types of measures: specific measures of the target skills (self-esteem, self-statements) and impact measures (quality of peer relationships, acceptability of intervention for adolescents and teachers) evaluated the effectiveness and social validity of the intervention. Multivariate Analyses of Variance showed significant improvements on measures of target skills for the SCT group in contrast to the comparison conditions on reported self-esteem, and self statements, however mixed results were found on the impact measures. While the SCT group was rated as highly acceptable and useful by both adolescents and teachers, student self report ratings of quality of peer relationships showed little change across the study period. We discussed our findings in terms of the effectiveness of group based cognitive interventions in developing adolescent self-esteem and social competence, and the ecological validity of implementing programs within naturalistic settings.

KEY WORDS: adolescent; self esteem; cognitive; social skills; evaluation.

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The past two decades has witnessed increasing interest in the importance of developing stable peer relationships in youth. As a result there has been a growing acknowledgment that social interaction problems during adolescence have implications for not only current adjustment but also for future psychological well being in terms of academic, occupational, and personal functioning (Christopher, Nangle, & Hansen, 1993; Oglivy, 1994; Spence, in press).

While much of this literature has focused on behavioral aspects of social skill development, several researchers (Bandura, 1986; Blonk, Prins, Sergent, & Ringrose, 1996; Delamater & McNamara, 1986; Gresham, 1986; Jupp, & Griffiths, 1990; Rubin, 1985) have directed their attention toward examination of the possible link between self-perception and social behavior. Findings from this body of research suggest that even though an individual may possess appropriate social skills to interact effectively with peers, feelings of insecurity resulting from negative self-perception may inhibit expression of prosocial behavior. Several studies have highlighted that such inhibition of prosocial behavior is an important determinant of social withdrawal and increases the probability of peer rejection (Cavell, 1990; Coie, Dodge, & Kupersmidt, 1990; McFarlane, Bellissimo, & Norman, 1995; Rosenberg, 1986). The relevance of self-esteem and the way the adolescent thinks about him/herself in various situations is not restricted to peer relationship difficulties. Adolescents with low self esteem are more likely to develop negative cognitive coping styles and are at increased risk for developing depression and suicidal tendencies (Kazdin, 1990; McFarlane et al., 1995; Overholster, Adams, Lehnert, & Brinkman, 1995).

Despite research identifying self esteem and cognitions about self as important areas to target with adolescents experiencing difficulties initiating and maintaining peer relationships, few school based interventions have specifically employed cognitive interventions which target these aspects of adolescent development (Jupp & Griffiths, 1990). Of the studies which have utilised cognitive interventions to modify adolescent self esteem and cognitive coping patterns, a number have found cognitive restructuring to be highly effective in modifying negative self perceptions and improving self esteem (Blonk et al., 1996; Heimburg; 1989; Verduyn, Lord, & Forrest, 1990; Warren, McLellarn, & Ponzoha, 1988).

Despite these positive results, a number of limitations in previous research restrict the generalisation of their findings (for example Blonk et al., 1996; Eitzen, 1975; Verduyn et al., 1990). An important limitation of past research has been the absence of an attention placebo comparison group and/or a waitlist control group. While the use of a waitlist control group enables comparison between persons who were involved in the group process versus those who were not, Mannarino, Christy, Durlak, and Magnussen (1982) and Barrett (1995) highlight that without an Attention Placebo group, (that is a group who receive a similar program but without the use of the specific skill development interventions), it is not possible to determine whether improvement in target variables were not due to the added attention of being involved in a group process. Thus reporting that any specific

changes due to the intervention, above nonspecific factors is not possible. Furthermore, a thorough evaluation of skills training programs requires measurement of outcomes which are socially valid, that is measures which answer the question of whether changes in cognition translate to modification of behavior which then makes a difference in the individual's life (Kazdin, 1977; Tisdell & St Lawrence, 1988; Wolf, 1978). Thus to evaluate the effectiveness of social cognitive skills training, measures of specific behavior and/or cognitions as well as measures of change in social behavior are required.

Given the above research findings and the highlighted shortcomings of a number these studies, we aimed to investigate whether social cognitive training can produce improvements in adolescent self esteem, self related perceptions and cognitions, and ultimately in adolescent peer relationships. Furthermore, the present study aims to build upon past findings by incorporating attention placebo and wait-list control groups so as to determine if changes in target variables are attributable to the specific intervention.

METHOD

Participants

The participants were sampled from a Catholic High school in Logan City (Queensland, Australia), which is a middle to low socio-economic status area (Australian Bureau of Statistics, 1995). The particular school was selected given the high need for mental health services for children and families in this area and thus was considered as an appropriate site for the implementation of preventive psychosocial interventions.

Fifty one students (15 males and 36 females), aged 13–16 years, were nominated by teachers and/or the school counselor as experiencing low self esteem and/or difficulties interacting with peers in social and school environments. Teacher ratings of student self esteem and peer relationships were utilised based upon findings of Dadds, Spence, Holland, Barrett, and Laurens, (1997) who identified teacher nominations as a reliable source of data for identifying students likely to be at risk of experiencing psychological distress and/or disorders. Students were nominated based upon ratings on the dimensions of (a) student participation with peers in class and social activities, and (b) teacher evaluation of student self confidence. Students scoring low on both dimensions were invited to take part in the study.

Participants had to complete both pre- and posttest measures in order to be included in the study.

Measures

Three measures were administered one week prior and one week after the intervention phase of the study. Students' self esteem was assessed using the

Rosenberg Self Esteem Scale (RSE: Rosenberg, 1965) which is a 10 item measure of global self esteem on which respondents rate their feelings of self acceptance, self respect, and positive self evaluation.

The RSE has been shown to have acceptable levels of reliability and validity, with test retest reliability of .85 over a two week period and internal consistency of .88 in adolescent populations (see Hagborg, 1993, for a review). Moreover the RSE has been recommended by a number of researchers as a psychometrically sound measure for use with school age children (Chui, 1988; Gurney, 1986).

Participants' self related cognitions and perception of self were measured by the Social Interaction Self Statement Test (SISST; Glass, Merluzzi, Beiver, & Larsen, 1982), which is a 30 item questionnaire. The SISST targets both positive (facilitative) and negative (debilitive) thoughts about self in a number of situations. In examining the SISST Glass et al. (1982) found the SISST to discriminate well between high and low anxious children and adolescents, based on their responses to the positive and negative thought statements within the questionnaire. In addition, factor analysis supported the proposed factor structure of the measure and accounted for 91.5% of the total variance.

To assess adolescents' perceptions of their peer relationships the Social Competence with Peers Questionnaire—Pupil Version (SCPQ; Spence, in press) was employed. The SCPQ is a 10 item questionnaire that asks respondents to rate the quality of their relationships with peers. Spence (in press) evaluated the psychometric properties of the SCPQ using 386 children and adolescents. It was found that the SCPQ had acceptable internal consistency with an alpha of .75 and split half reliability of .77. The children and adolescents' SCPQ also correlated with parent ratings $r = .54$, teacher ratings $r = .40$, and to a lesser extent peer ratings $r = .31$ of the child/adolescents' social relationships. Within the present study this questionnaire was used to assess the social validity of the intervention. That is, changes due to social cognitive training produced improvement in peer relationships and not only on measures of self esteem and cognitions.

There were two additional measures used to access the social validity of the program post intervention—Acceptability of the intervention for adolescents and Acceptability of the intervention for teachers. Both these measures were based on scales previously used and experimentally validated by Dadds et al. (1997).

Procedure

Participants completed the RSE, SISST, and SCPQ prior to allocation to one of the three groups—the four session social cognitive training group, the four session attention placebo group, or the waitlist control group. Allocation to a group was based on a process of matching whereby each group was equivalent on a number of variables namely; gender, age, and scores on the RSE, SISST, and SCPQ.

To ensure that groups were evenly matched on target variables pre-intervention chi-square tests and one way analyses of variance (ANOVAs) comparing the three groups were performed. There was no significant differences between groups for gender, $\chi^2(2, N = 51) = .89$, $p > .05$. (overall 36 females, 15 males) or age, $F(2,48) = .34$, $p > .05$ or between the conditions on the self report measures at pre-intervention; (RSE): $F(2,48) = 2.62$, $p > .05$.; (SISST): $F(2,48) = .45$, $p > .05$.; (SCPQ): $F(2,48) = .65$, $p > .05$.; (SCQ): $F(2,48) = 1.39$, $p > .01$. Thus, all groups began at a comparable level of functioning.

Therapists were randomly assigned to one of the two intervention groups—social cognitive training or the attention placebo group—and sessions were conducted on a weekly basis with each session lasting 90 minutes. Five postgraduate psychology students and one Clinical Psychologist were trained over a period of four weeks to serve as therapists in the study. Training consisted of familiarisation with program manuals and materials, and a series of role plays in which feedback regarding adherence to manual protocol and group process was provided.

While it has been suggested that group sizes of less that 12 participants are most effective (Bierman & Furman, 1984; Bulkely & Cramer, 1990), we ran groups of up to 17 students due to demand for the program within the educational setting. To offset the increased number of participants three therapists were allocated to each group. It was considered that with a 6:1 student to therapist ratio that each student would receive adequate attention.

Social Cognitive Training Intervention

The program focused on developing knowledge and skills relevant to the issues of self esteem, self talk and modification of negative thinking, the use of more positive thinking, communication, problem solving, and perception. The program encouraged individuals to work on personally relevant situations and issues through individual and group processes. Processes of instruction, coaching, modeling, rehearsal, self observation, group trainer and peer feedback, and praise were widely utilised to shape and reinforce new and improved skills. In addition to in-session processes all participants completed weekly homework assignments relevant to the weekly topic so as to reinforce skills developed in the group and increase generalisation of learning.

The Attention Placebo Comparison Intervention

This group covered the same content to the social cognitive training intervention group, however the content was delivered in a lecture format, including videos and large group discussions. Therapists took a non-directive role in these sessions and there were no attempts to develop solutions to the problems discussed.

RESULTS

Prior to data analysis, all dependent variables were examined for accuracy of data entry, missing values and fit between their distribution and the assumptions of multivariate analyses. The total number of 52 cases was reduced to 51 with the deletion of a case missing a score on the post measure of self esteem. The results of checks of homogeneity of variance, normality, linearity and multicollinearity identified no violations of assumptions.

Examination of changes in scores on each of the dependent measures from pre to post program highlights an improvement in self esteem, self related cognitions and perceptions, and perceptions of peer relationships for the social cognitive intervention group. Furthermore, significant differences between the social cognitive intervention and the two other conditions were observed on two of the three measures at post intervention. Table 1 presents the means and standard deviations for the self report measures at pre and post intervention for the three conditions.

Responses on the four dependent variables were submitted to a 2 (phase: pre- vs. post-treatment) × 3 (condition: Intervention, attention placebo and wait-list) multivariate analysis of variance (MANOVA) to determine whether the above effects were significant at the multivariate level, prior to further examination of the univariate results. Where a significant interaction occurred between treatment and time, time effects were examined within each group, and treatment conditions were compared at the relevant time. Given that all the hypotheses in the present

Table 1. Means and Standard Deviations of Adolescent Self-Report Measures for the Three Group Conditions, Pre-Intervention and Post-Intervention

	Pre-Intervention			Post-Intervention		
Measure	Intervention (N = 19)	APC (N = 16)	WL (N = 16)	Intervention (N = 19)	APC (N = 16)	WL (N = 16)
SE Scale						
M	26.4	23.3	22.5	19.6ab	23.4a	23.6b
SD	5.6	5.3	5.2	4.0	5.0	3.5
SISST						
M	89.3	85.5	85.9	76.5ab	81.6a	84.6b
SD	13.0	15.9	9.0	7.7	15.8	9.9
SCPQ						
M	15.7	14.6	14.5	14.1	14.4	14.4
SD	4.3	2.9	3.2	3.3	2.4	3.4
Skills Q.						
M	34.5	32.2	32.6	27.8ab	32.9a	31.8b
SD	4.7	5.3	2.7	4.3	5.0	3.8

Note: On all measures a reduction in score is indicative of improvement.
Means with the same subscripts (a,b) are different from each other using Tukey's HSD test at $p < .0125$.

Table 2. Summary of the Results From 2 (Phase: Pre- vs. Post Intervention) x 3 (Condition: Intervention, Attention Placebo and Waitlist) MANOVA Procedure

Source	df	F Ratio	F Prob.
Group	8,90	.37	.466
Time	4,45	.549	.000*
Group x Time	8,90	.327	.000*

*$p < .001$.

study are directional, the reported p values are one tailed. Additionally, the level of significance was reduced to .0125 in line with Bonferroni corrections.

Using Wilks' statistic, a significant interaction was found between group and time (Phase: pre-Post), $F(8,90) = 8.42$, $p < .001$, with an effect size of $\eta = .428$. A significant main effect was found for time $F(4,45) = 9.24$, $p < .001$ on all dependent variables (effect size $\eta = .451$), but not for group $F(8,90) = .37$, $p > .01$. A summary of the multivariate analysis of variance results are presented in Table 2.

More specifically, analyses of self esteem across intervention type revealed a significant group x time (pre-post) interaction, $F(2,48) = 31.3$, $p < .001$. That is, participants in the intervention group showed improved self esteem across the study period when compared to both the attention placebo and waitlist groups whose scores remain relatively stable across time.

Further examination of the interaction—via a one-way ANOVA with Tukey's Honestly Significant Difference (HSD) and paired sample t-tests—revealed a significant difference between the three groups at post intervention $F(2,48) = 4.92$, $p < .0125$ and with Tukey's HSD test confirming that the intervention group had significantly lower scores than both the comparison conditions.

A main effect for time was also found, $F(1,48) = 16.3$, $p < .001$, however paired sample t-test only revealed a significant difference pre to post for the intervention group $t(18) = -7.16$, $p < .001$.

The MANOVA examination of adolescents' self cognitions and perceptions across the study period revealed a significant interaction between group x time, $F(2,48) = 9.64$, $p < .001$. The interaction highlights that adolescents in the intervention group reported using fewer negative self statements and had an improved self perception after the program whereas adolescents in the APC and WL groups reported no change in self statements used or in perception of themselves.

Univariate tests highlighted the significant difference between the three groups at post intervention $F(2,48) = 4.59$, $p < .0125$ on the SISST. The post hoc Tukey's HSD test confirmed that at post intervention, the intervention group had significantly lower scores than both the comparison conditions. A main effect for time was also found, $F(1,48) = 15.8$, $p < .001$, the paired sample t-test revealed a significant difference between pre to post intervention for the intervention group only $t(18) = -6.25$, $p < .001$.

Examination of adolescents' perceptions regarding changes in peer relationships across the study period, and adolescent and teacher perceptions of the usefulness of the program were utilised to assess the social validity of the social cognitive training program.

Examination of changes in peer relationships resulting from social cognitive training, using MANOVA, revealed a significant group x time interaction $F(2,48) = 4.95$, $p < .0125$. It appeared that the intervention group's scores on the SCPQ have slightly increased over time, in comparison to the attention placebo and waitlist group which appear to have remained relatively stable. It is of note that an increase in SCPQ scores is reflective of an increase in perceived interpersonal difficulties with peers.

Additional social validity results come from the acceptability scales. Adolescents reported that they found the social cognitive program to be highly relevant and acceptable as indicated by the $M = 59.68$, (maximum score possible = 68), and $SD = 6.24$. In comparison, adolescents in the APC group score on the acceptability measure was $M = 41.19$, $SD = 7.94$. The acceptability of the intervention for the teachers was also high, with a $M = 9.88$, $SD = 2.10$ (possible maximum score = 12).

DISCUSSION

Findings of the present study provide further evidence that group social cognitive training with adolescence facilitates improvements in self esteem and cognitions regarding one's self perception. While previous studies (for example; Ladd & Mize, 1983; McLellarn, & Ponzoha, 1988; Spence, in press; Verduyn et al., 1990) have also reported improvements in children and adolescents' self esteem and use of positive thinking patterns following a social skills or cognitive intervention, our study utilised comparison groups so as to provide additional evidence that changes were directly related to the intervention and not to nonspecific factors such as involvement in a group process. The finding that the specific intervention was related to greater improvements in self esteem and the use of adaptive cognitive patterns when compared to the APC group is further evidence that the specific skill development processes produced change in target variables. This is especially so given that the difference between the social cognitive intervention and the APC groups was the use of specific skill development processes and procedures.

Results of the data on the social validity of the social cognitive program, that is whether adolescents reported a perceived change in their social interactions, and whether they found the program to be useful to their lives, was mixed. Analysis of adolescents self reported peer interaction competence pre to post showed a slight increase in perceived interpersonal difficulties. Our finding of little to no change in social behavior after cognitive training is similar to the findings of La Greca and Santagrossi (1980) who found that no changes in socially valid outcomes

were evident following skills training, despite improvements being reported on a number of outcome measures such as self esteem.

While their is a need to evaluate social skills and social cognitive training interventions against measures such as changes in social behavior (Hughes & Sullivan, 1988) the measures employed need to be sensitive to change, and include ratings not only of the participant but also of peers, family and/or teachers. As seen in the measurement of child and adolescent behavior, self report or teacher report or child report alone may not be the most accurate measure of specific behaviors which occur across settings (Achenbach, 1991).

Another possible explanation for these findings could be that although skills training may facilitate positive changes in cognitions and/or targeted social interaction skills within the program, other specific intervention strategies may need to be incorporated in order to produce changes in social behavior in the adolescent's natural environment. Moreover, perhaps these results indicate that negative self perceptions do not play such a central role in changing social behavior as has been suggested (e.g., Bandura, 1986; Blonk et al., 1996; Delamater & McNamara, 1986; Gresham, 1985; Jupp & Griffiths, 1990; Rubin, 1985). While self perceptions about one's ability to interact successfully in various social situations may moderate behavior, it may be suggested that a more fundamental factor in producing change in social behavior lies in developing interventions which also alter the wider social environment. That is, interventions may need to be more systemic in their approach. For example, for an adolescent to display an increase in prosocial behavior, reinforcement for such behavior must be forthcoming from his/her peer group.

The findings of the present study that adolescents rated the social cognitive program as useful and relevant to their lives is important in terms of developing programs in which drop out rates are low. Furthermore, the data highlighting that teachers also saw the program as useful and relevant is encouraging not only because it is important that teachers understand the benefits of preventive interventions, but also in terms of teachers reinforcing the validity of the intervention to students and other staff, as well as reinforcing efforts and gains made by students. As highlighted by Jupp and Griffiths' (1990) study, interventions need to be delivered in a proximal area to the population and also be seen as relevant to students and teachers for drop out rates to be decreased. Therefore, findings on the present social cognitive program's usefulness and relevance provide support for continual development and implementation of such programs within school settings.

The results from this study can also be seen as important in terms of filling a noticeable gap within both the cognitive skills and social skills literature as the majority of studies have ignored issues of social validity and intervention acceptability, despite this being a vital ingredient in the success of an intervention (Christopher et al., 1993).

While the social cognitive program found that adolescent self esteem and self cognitions improved subsequent to the intervention, results from the present study

need to be considered in light of several methodological shortcomings. Firstly, the adolescents involved in the study were from a sample of convenience. Hence generalisation from this sample to other groups of adolescents needs to be considered. Secondly, the small number of adolescents who were involved in each treatment group must be acknowledged as a limitation, especially given the data analyses conducted. Thirdly, the lack of further follow-up data restricts the ability of the study determining whether the intervention effects were durable.

Despite the aforementioned limitations, this study builds upon previous studies notably by the inclusion of the attention placebo and waitlist control groups. In finding significant improvements in target variables which were attributable to the specific skills component of the social cognitive program our study provides support for implementing adolescent self esteem and cognitive skills training more widely in school environments. Furthermore, considering the relationship between low self esteem and depression (King, Naylor, Segal, Evans, & Shain, 1993; Maxwell, 1992; Smart, & Walsh, 1993) development of interventions which aim to ameliorate the detrimental impact of low self esteem during the period of adolescence are of vital importance.

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