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BRIEF CLINICAL REPORT

School-based cognitive-behavioural group intervention for reducing rumination in adolescents

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Abstract

Background: Rumination is a repetitive cognitive process associated with emotional distress and may represent an important preventive target during adolescence.
Aims: This study examined the effectiveness of a CBT-based group psychoeducation programme in reducing rumination among adolescents.
Method: A total of 173 eighth-grade students were screened, and 43 adolescents with elevated rumination were enrolled and randomly assigned to experimental, placebo, and control groups; 41 completed the study. A quasi-experimental pre-test–post-test–follow-up design was used.
Results: A mixed-design ANOVA showed significant time, group, and time × group effects. Rumination decreased significantly in the experimental group and was maintained at the 4-week follow-up, whereas no meaningful change was observed in the placebo or control groups.
Conclusions: School-based CBT-oriented psychoeducation may represent a promising preventive approach for adolescents with elevated rumination.

Keywords: adolescents; cognitive behavioural therapy; psychoeducation; prevention; rumination; school-based intervention

Introduction

Rumination is a repetitive cognitive process associated with emotional distress and increased vulnerability to depression and anxiety (Nolen-Hoeksema, 1991; Watkins, 2011). During adolescence, vulnerability to maladaptive cognitive processes such as rumination may become more pronounced, highlighting the importance of early preventive interventions. School settings may provide a useful context for implementing such interventions.

Cognitive behavioural therapy (CBT) offers a relevant framework for addressing rumination by targeting dysfunctional thought patterns and promoting adaptive coping strategies (Watkins, 2011). Although CBT-based approaches have shown promise, there remains a need for brief school-based interventions targeting rumination in adolescents (McEvoy *et al.*, 2015; Topper *et al.*, 2017).

The present study examined whether a CBT-based group psychoeducation programme would reduce rumination among adolescents and whether these effects would be maintained at follow-up.

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Method

Participants and procedure

The study was conducted with eighth-grade students attending a public middle school in the Turkish Republic of Northern Cyprus. Initially, 173 students completed the Short Form of the Ruminative Response Scale (RRS-SF). Following the calculation of mean and standard deviation scores, students scoring one or more standard deviations above the mean were identified as having elevated rumination levels. These students were invited to brief individual interviews, informed about the study, and those who volunteered with parental consent were included. A total of 43 students participated.

Participants were randomly assigned to three groups using a lottery method: an experimental group ($n = 15$), a placebo group ($n = 14$), and a control group ($n = 14$). During the intervention process, two participants from the experimental group discontinued participation after the first few sessions; therefore, the study was completed with 41 participants.

The experimental group received a cognitive-behavioural psychoeducation programme. The placebo group attended weekly career guidance sessions (60 minutes each) for 8 weeks, focusing on interests, abilities, and educational choices, whereas the control group received no intervention. Participants were aged between 13 and 14 years.

Ethical approval was obtained from the European University of Lefke Ethics Committee (BAYEK023.01; 11 April 2023), and written parental consent was obtained prior to participation.

Design

A quasi-experimental pre-test–post-test–follow-up control group design was employed with three conditions (experimental, placebo, control) and three time points (pre-test, post-test, and follow-up). The study was considered quasi-experimental because participants were selected through screening prior to group allocation. A follow-up assessment was conducted 4 weeks after the intervention.

Measures

The Ruminative Response Scale-Short Form (RRS-SF; Treynor *et al.*, 2003) consists of 10 items rated on a 4-point scale (1 = never, 4 = always). Higher scores indicate greater rumination. The scale has demonstrated acceptable internal consistency ($\alpha = .85$). Scores were calculated as mean item scores, with higher values indicating greater rumination.

A short demographic form collected information on participants' gender and age.

Intervention

The CBT-based psychoeducation programme aimed to reduce rumination among adolescents. It consisted of eight weekly group sessions (60 minutes each) delivered by the researcher. The programme included psychoeducation about rumination, identification and restructuring of dysfunctional thoughts, and cognitive behavioural techniques such as Socratic questioning, mental imagery, and role-playing. Homework assignments were provided to reinforce learning.

Data analysis

Data were analysed using IBM SPSS 25. Normality was assessed using Kolmogorov–Smirnov tests and skewness–kurtosis values. Baseline equivalence across groups was examined in terms of rumination scores, and the groups were also compared descriptively in terms of age and gender distribution.

Table 1. Descriptive statistics for rumination scores (pre-, post-, and follow-up)

Group	Pre-test M (SD)	Post-test M (SD)	Follow-up M (SD)
Experimental	2.94 (.21)	2.29 (.20)	2.38 (.21)
Placebo	2.96 (.20)	2.80 (.20)	2.96 (.20)
Control	2.99 (.21)	3.03 (.21)	3.02 (.21)

To examine changes over time and between groups, a mixed-design ANOVA was conducted with group (experimental, placebo, control) as the between-subjects factor and time (pre-test, post-test, follow-up) as the within-subjects factor. Greenhouse–Geisser corrections were applied when necessary, and effect sizes (η^2p) were reported. Significant effects were followed up with *post-hoc* comparisons.

Results

Preliminary analyses indicated that the data met the assumptions for parametric testing based on Kolmogorov–Smirnov and skewness–kurtosis values. There were no significant baseline differences between the experimental, placebo, and control groups in terms of rumination scores, $F_{2,38} = 0.230$, $p = .795$. The groups were also comparable in terms of age and gender distribution.

A mixed-design ANOVA with three groups (experimental, placebo, control) and three time points (pre-test, post-test, follow-up) revealed significant main effects of time, $F_{2,36} = 37.90$, $p < .001$, $\eta^2p = .51$, and group, $F_{2,38} = 45.40$, $p < .001$, $\eta^2p = .54$, as well as a significant time × group interaction, $F_{4,76} = 51.90$, $p < .001$, $\eta^2p = .58$. These effect sizes were in the large range, indicating a strong effect.

As shown in Table 1, rumination scores in the experimental group decreased from pre-test ($M = 2.94$, $SD = .21$) to post-test ($M = 2.29$, $SD = .20$), and this reduction was largely maintained at follow-up ($M = 2.38$, $SD = .21$). In contrast, rumination scores in the placebo group showed a small reduction at post-test but returned to baseline levels at follow-up. Scores in the control group remained relatively stable across all three measurement points.

Further analyses showed that the decrease in rumination scores across time was statistically significant in the experimental group ($p < .001$), whereas no significant change was observed in the placebo ($p = .054$) or control group ($p = .898$).

Post-hoc comparisons indicated that, at post-test, the experimental group had significantly lower rumination scores than both the placebo and control groups ($p < .001$), and the placebo group also differed significantly from the control group ($p < .001$). At follow-up, the experimental group continued to report significantly lower rumination scores than both the placebo and control groups ($p < .001$), whereas the difference between the placebo and control groups was no longer significant.

Within the experimental group, the reduction in rumination from pre-test to post-test was significant, and the difference between pre-test and follow-up scores also remained significant. The non-significant difference between post-test and follow-up scores indicated that treatment gains were maintained over the 4-week follow-up period.

Discussion

The findings suggest that the CBT-based psychoeducation programme was associated with a reduction in rumination among adolescents, and these gains were maintained at follow-up. No comparable change was observed in the placebo or control groups.

These findings are consistent with previous research indicating that cognitive-behavioural interventions may help reduce maladaptive repetitive thinking in adolescence (Topper *et al.*, 2017; Watkins, 2011). The structured and cognitively focused nature of the programme may have contributed to its observed effects. The absence of sustained change in the placebo group may suggest that non-specific supportive activities alone are insufficient to reduce rumination without structured cognitive components.

From a practical perspective, the programme may represent a feasible school-based preventive intervention. With appropriate training and supervision, similar programmes may be adapted for delivery by school-based mental health professionals.

This study was limited by its small sample, single-school setting, short follow-up period, and reliance on self-report. Future research should examine similar interventions in larger and more diverse adolescent samples.

Data availability statement. The data that support the findings of this study are not publicly available due to ethical restrictions involving minors and school-based confidentiality agreements, but are available from the corresponding authors on reasonable request and with institutional permissions.

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Competing interests. The authors declare that there are no competing interests.

Ethical standards. This study was approved by the Ethics Committee of the Institute of Graduate Education and Research at European University of Lefke (date: 11 April 2023, decision no. BAYEK023.01). Participation was voluntary, and written informed consent was obtained from the parents of all participating students.

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