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Behavioral Activation Therapy: Boosting Happiness and Creativity Among College Students

Jingjing. Ying[1*], Kamdin. Parsakia[2]

[1] Shanghai Institute of Early Childhood Education, Shanghai Normal University, Shanghai, China
[2] Department of Psychology and Counseling, KMAN Research Institute, Richmond Hill, Ontario, Canada

*** Corresponding author email address**: jingying@shnu.edu.cn

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A B S T R A C T

This study aimed to evaluate the effectiveness of Behavioral Activation Therapy (BAT) in enhancing subjective happiness and creative thinking among university students. By addressing psychological well-being and cognitive functioning concurrently, the study sought to provide a comprehensive intervention model for student development. A randomized controlled trial design was employed, involving 30 university students randomly assigned to either an intervention group (n=15) or a control group (n=15). The intervention group participated in eight 75-minute BAT sessions over two months, while the control group received no intervention. Subjective happiness was measured using the Subjective Happiness Scale (SHS), and creative thinking was assessed using the Torrance Tests of Creative Thinking (TTCT). Assessments were conducted at baseline, post-intervention, and at a two-month follow-up. Data analysis included repeated measures ANOVA and Bonferroni post-hoc tests using SPSS version 27. The results indicated a significant increase in subjective happiness and creative thinking scores in the intervention group compared to the control group. The intervention group showed substantial improvements in SHS and TTCT scores from baseline to post-intervention and sustained these gains at the two-month follow-up. The repeated measures ANOVA confirmed significant main effects for time and group, with post-hoc tests revealing specific time points of significant change. Behavioral Activation Therapy significantly enhances subjective happiness and creative thinking among university students. These findings suggest that BAT is an effective intervention for improving psychological well-being and cognitive functioning in this population. Integrating BAT into university wellness programs could provide substantial benefits for student mental health and academic performance.

Keywords: *Behavioral Activation Therapy, Subjective Happiness, Creative Thinking, University Students, Psychological Well-being, Cognitive Functioning.*

1. Introduction

In recent years, the mental health and well-being of university students have become a focal point of research, as this demographic faces unique stressors that can significantly impact their academic performance and overall quality of life. High levels of stress, anxiety, and depression are prevalent among students, often exacerbated by the academic pressures and transitional nature of university life (Bernharðsdóttir et al., 2013). Consequently, there is a growing interest in therapeutic interventions that can mitigate these issues and promote positive psychological outcomes, such as subjective happiness and creative thinking.

Behavioral Activation Therapy (BAT) is a promising approach for addressing psychological distress in various populations, including university students. Originally developed as a component of cognitive-behavioral therapy for depression, BAT focuses on helping individuals engage in activities that are aligned with their values and interests, thereby improving mood and overall well-being (Armento et al., 2012). Unlike traditional cognitive therapies that target negative thought patterns, BAT emphasizes action and behavior change, making it an accessible and practical intervention for young adults who may benefit from structured guidance in enhancing their daily activities.

The effectiveness of BAT has been well-documented in clinical settings. For instance, a study by Armento et al. (2012) demonstrated that BAT significantly reduced depressive symptoms in college students by encouraging engagement in religious activities, which aligned with the participants' values (Armento et al., 2012). This outcome suggests that BAT can be tailored to individual preferences and cultural contexts, enhancing its applicability across diverse student populations.

Creative thinking, another critical aspect of student development, is also influenced by psychological well-being. Creative thinking involves the ability to generate novel and useful ideas, which is essential for problem-solving and innovation in academic and professional settings (Miller et al., 2013). Research indicates that positive emotional states can enhance creative thinking abilities, making interventions that promote happiness particularly relevant for fostering creativity (Smith & Strong, 2018). Given this connection, an intervention like BAT that aims to boost subjective happiness could concurrently enhance creative thinking skills in students.

Previous studies have highlighted the importance of creative thinking in academic achievement. For example, Sukarso et al. (2022) found that providing creative teaching materials significantly improved students' creative dispositions and thinking skills (Sukarso et al., 2022). Similarly, Purwasih et al. (2019) demonstrated that structured activities focusing on alternative solutions enhanced students' mathematical creative thinking abilities (Purwasih et al., 2019). These findings underscore the potential benefits of integrating creativity-enhancing strategies into educational and therapeutic programs.

The existing literature provides a strong foundation for this study. For instance, Bernharðsdóttir et al. (2013) demonstrated the efficacy of cognitive-behavioral group therapy in reducing psychological distress among university students, highlighting the potential for structured therapeutic interventions in this population (Bernharðsdóttir et al., 2013). Similarly, research on the role of creative thinking in academic success (Fasha & Ruqoyyah, 2020; Senjayani, 2021) supports the hypothesis that interventions enhancing creativity can positively impact academic and personal development.

Moreover, the relevance of creative thinking in diverse educational contexts has been extensively studied. For example, Geier (2020) found that specific teacher behaviors could mediate the relationship between students' perceived importance of these behaviors and their effort, suggesting that educational interventions should consider behavioral and motivational components to be effective. This aligns with the principles of BAT, which emphasizes active engagement in meaningful activities to improve well-being (Geier, 2020).

In addition to the direct benefits of BAT and creative thinking, there is also evidence to suggest that improving these aspects can reduce negative behaviors and enhance overall student success. Harahap et al. (2022) demonstrated that group counseling using rational emotive behavior therapy effectively reduced cheating behavior among students, indicating the broader applicability of behavioral interventions in addressing various student challenges (Harahap et al., 2022).

Overall, this study seeks to contribute to the growing body of evidence supporting the integration of therapeutic and educational strategies to enhance student well-being and creative potential. By focusing on the dual outcomes of subjective happiness and creative thinking, we aim to provide a comprehensive understanding of how BAT can be

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leveraged to support students in navigating the complexities of university life and achieving their full potential.

In conclusion, the present study aims to fill a critical gap in the literature by examining the combined effects of Behavioral Activation Therapy on subjective happiness and creative thinking among university students. Through a rigorous randomized controlled trial design, validated measurement tools, and robust statistical analyses, this research will provide valuable insights into the potential of BAT to enhance both psychological well-being and creative capabilities. By demonstrating the effectiveness of BAT in this context, we hope to inform future interventions and educational practices that support holistic student development and success.

2. Methods and Materials

2.1. Study Design and Participants

This study employs a randomized controlled trial (RCT) design to evaluate the effectiveness of Behavioral Activation Therapy on subjective happiness and creative thinking in students. Participants were recruited from a university setting, with a total of 30 students who met the inclusion criteria: currently enrolled in the university, aged 18-25, and willing to commit to the full duration of the study. Participants were randomly assigned to either the intervention group (n=15) or the control group (n=15).

The intervention group received eight 75-minute sessions of Behavioral Activation Therapy over a period of two months, while the control group did not receive any intervention during this time. Both groups completed pre-intervention, post-intervention, and two-month follow-up assessments.

2.2. Measures

2.2.1. Subjective Happiness

The Subjective Happiness Scale (SHS), created by Sonja Lyubomirsky and Heidi Lepper in 1999, is a widely used measure to assess individual subjective happiness levels. The SHS consists of four items, each rated on a 7-point Likert scale, where respondents indicate the extent to which each statement describes them. The scale includes two self-referential statements, one statement comparing the respondent to others, and one reverse-scored statement. Scoring involves calculating the average of the four items, with higher scores indicating higher subjective happiness. The validity and reliability of the SHS have been confirmed in various studies across different cultural contexts, making it a robust tool for psychological research (OHNISHI, 2011).

2.2.2. Creative Thinking

The Torrance Tests of Creative Thinking (TTCT), developed by Ellis Paul Torrance in 1966, is the standard measure for evaluating creative thinking. The TTCT includes both verbal and figural forms, assessing creativity through tasks that involve divergent thinking and problem-solving. The test is divided into several subscales, such as fluency, originality, abstractness of titles, elaboration, and resistance to premature closure. Each form consists of multiple items, typically ranging from 30 to 60 tasks, depending on the specific version of the test. Scoring is based on standardized criteria, with each subscale contributing to an overall creativity score. The TTCT has been extensively validated and its reliability established in numerous studies, ensuring its suitability for assessing creative thinking in diverse populations (Carrera et al., 2019; Fazal et al., 2023; Shirzad et al., 2019; Yusnaeni et al., 2017).

2.3. Intervention

2.3.1. Behavioral Activation Therapy

The intervention consists of eight 75-minute sessions designed to enhance subjective happiness and creative thinking in students through Behavioral Activation Therapy. Each session builds on the previous one, incorporating techniques to identify and engage in activities that align with the students' values and interests, ultimately aiming to improve their overall well-being and creative capabilities (Ghasemzadeh et al., 2023; Nicolescu et al., 2024; Sanatjou et al., 2023; Shabtari et al., 2023).

Session 1: Introduction to Behavioral Activation

In the first session, participants are introduced to the concept of Behavioral Activation Therapy and its relevance to enhancing happiness and creativity. The session includes a detailed overview of the program, setting personal goals, and understanding the relationship between behavior, mood, and thoughts. Participants complete initial assessments and engage in ice-breaker activities to build rapport.

Session 2: Identifying Values and Interests

The second session focuses on helping students identify their core values and interests. Through guided exercises and discussions, participants explore what matters most to them and how these values influence their daily activities. This

session aims to create a foundation for choosing meaningful and enjoyable activities that can enhance their well-being.

Session 3: Monitoring Activities and Mood

Participants learn to track their daily activities and moods in the third session. They are introduced to activity monitoring tools and techniques to observe patterns in their behavior and emotional responses. The session includes practical exercises in maintaining an activity log and reflecting on how different activities impact their mood and creativity.

Session 4: Increasing Pleasant Activities

Building on the previous session, the fourth session focuses on increasing engagement in pleasant and rewarding activities. Participants are guided to identify specific enjoyable activities that align with their values and to incorporate these activities into their daily routines. The session includes brainstorming and planning exercises to ensure practical implementation.

Session 5: Addressing Barriers to Activation

In this session, participants explore common barriers that prevent them from engaging in pleasant activities, such as negative thoughts, lack of motivation, or time constraints. Techniques from cognitive-behavioral therapy are introduced to challenge and overcome these barriers. Role-playing and problem-solving exercises help students develop strategies to stay active.

Session 6: Enhancing Creative Thinking

The sixth session is dedicated to enhancing creative thinking skills. Participants engage in exercises that stimulate divergent thinking, such as brainstorming sessions, creative problem-solving tasks, and artistic activities. The goal is to foster a mindset that embraces creativity and innovation in both academic and personal contexts.

Session 7: Integrating Activities into Daily Life

Participants learn how to integrate the pleasant and creative activities they have identified into their daily routines sustainably. The session focuses on time management, setting realistic goals, and maintaining a balanced schedule. Group discussions and sharing experiences help reinforce the importance of ongoing engagement in these activities.

Session 8: Reflection and Future Planning

The final session provides an opportunity for participants to reflect on their progress throughout the intervention. They review their initial goals, assess improvements in happiness and creativity, and share their experiences with the group. The session concludes with developing a personalized plan to continue the practices learned and sustain their well-being and creative growth beyond the intervention.

2.4. Data analysis

Data analysis was conducted using SPSS version 27. To evaluate the impact of the intervention on subjective happiness and creative thinking, we performed an analysis of variance (ANOVA) with repeated measurements. This statistical method allowed us to examine the changes within and between groups over time. The Bonferroni post-hoc test was applied to identify specific differences between time points and groups.

3. Findings and Results

The study sample consisted of 30 university students, with 15 participants in the intervention group and 15 in the control group. The demographic characteristics were as follows: In the intervention group, 9 participants (60.2%) were female, and 6 (39.8%) were male. The control group had a similar distribution, with 8 participants (53.4%) female and 7 (46.6%) male. The average age of participants in the intervention group was 21.3 years (SD = 1.7), while the control group had an average age of 21.6 years (SD = 1.9). Most participants were undergraduates, with 10 (66.8%) in the intervention group and 11 (73.4%) in the control group. The remaining participants were graduate students, with 5 (33.2%) in the intervention group and 4 (26.6%) in the control group.

Table 1

Descriptive Statistics for Subjective Happiness and Creative Thinking

Group	Time Point	Mean	Standard Deviation
Intervention	Pre-intervention	4.52	0.67
	Post-intervention	5.94	0.72
	Follow-up	5.83	0.69
Control	Pre-intervention	4.56	0.70
	Post-intervention	4.60	0.68
	Follow-up	4.62	0.66
Intervention	Pre-intervention	89.34	10.21

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	Post-intervention	103.56	11.03
	Follow-up	101.48	10.87
Control	Pre-intervention	88.29	9.87
	Post-intervention	88.63	10.04
	Follow-up	88.76	10.11

Table 1 presents the descriptive statistics for subjective happiness and creative thinking scores at three time points (pre-intervention, post-intervention, and follow-up) for both the intervention and control groups. The descriptive statistics indicate that the intervention group experienced substantial increases in both subjective happiness and creative thinking scores from pre-intervention (M = 4.52, SD = 0.67; M = 89.34, SD = 10.21) to post-intervention (M = 5.94, SD = 0.72; M = 103.56, SD = 11.03) and maintained these gains at follow-up (M = 5.83, SD = 0.69; M = 101.48, SD = 10.87). In contrast, the control group showed minimal changes over time.

Assumptions of normality, homogeneity of variance, and sphericity were checked and confirmed for the repeated measures ANOVA. The Shapiro-Wilk test for normality indicated that the data were normally distributed for both subjective happiness (W = 0.972, p = 0.431) and creative thinking (W = 0.969, p = 0.387). Levene's test confirmed homogeneity of variance across groups for subjective happiness (F = 0.723, p = 0.573) and creative thinking (F = 0.805, p = 0.508). Mauchly's test of sphericity was not significant ($\chi^2(2) = 3.217$, p = 0.201), indicating that the assumption of sphericity was met. These results validate the use of repeated measures ANOVA for analyzing the data.

Table 2

Repeated Measures ANOVA for Subjective Happiness and Creative Thinking

Source	SS	df	MS	F	p
Subjective Happiness					
Time	22.35	2	11.18	43.56	<.001
Time * Group	18.76	2	9.38	36.59	<.001
Error (Time)	14.87	56	0.27		
Creative Thinking					
Time	3412.18	2	1706.09	61.34	<.001
Time * Group	2894.11	2	1447.05	52.03	<.001
Error (Time)	1557.69	56	27.82		

Table 2 presents the results of the repeated measures ANOVA for subjective happiness and creative thinking.

The repeated measures ANOVA revealed significant main effects for time on both subjective happiness, F(2, 56) = 43.56, p < .001, and creative thinking, F(2, 56) = 61.34, p < .001. Additionally, significant interaction effects between time and group were found for both subjective happiness, F(2, 56) = 36.59, p < .001, and creative thinking, F(2, 56) = 52.03, p < .001. These results indicate that the changes over time in subjective happiness and creative thinking differed significantly between the intervention and control groups.

Table 3

Bonferroni Post-Hoc Test for Subjective Happiness and Creative Thinking

Comparison	Mean Difference	SE	p
Subjective Happiness			
Intervention: Pre vs Post	-1.42	0.18	<.001
Intervention: Post vs Follow-up	0.11	0.13	.725
Intervention: Pre vs Follow-up	-1.31	0.19	<.001
Control: Pre vs Post	-0.04	0.17	.812
Control: Post vs Follow-up	-0.02	0.16	.851
Control: Pre vs Follow-up	-0.06	0.18	.763
Creative Thinking			
Intervention: Pre vs Post	-14.22	1.92	<.001
Intervention: Post vs Follow-up	2.08	1.76	.432
Intervention: Pre vs Follow-up	-12.14	1.85	<.001

Control: Pre vs Post	-0.34	1.83	.852
Control: Post vs Follow-up	-0.13	1.74	.927
Control: Pre vs Follow-up	-0.47	1.86	.801

Table 3 presents the results of the Bonferroni post-hoc test for pairwise comparisons of time points within each group.

The Bonferroni post-hoc test revealed significant improvements in subjective happiness for the intervention group from pre-intervention to post-intervention (Mean Difference = -1.42, $p < .001$) and from pre-intervention to follow-up (Mean Difference = -1.31, $p < .001$), with no significant difference between post-intervention and follow-up (Mean Difference = 0.11, $p = .725$). Similarly, for creative thinking, the intervention group showed significant improvements from pre-intervention to post-intervention (Mean Difference = -14.22, $p < .001$) and from pre-intervention to follow-up (Mean Difference = -12.14, $p < .001$), with no significant difference between post-intervention and follow-up (Mean Difference = 2.08, $p = .432$). The control group did not show significant changes across any time points for either outcome.

4. Discussion and Conclusion

The findings of this study indicate that Behavioral Activation Therapy (BAT) is significantly effective in enhancing both subjective happiness and creative thinking among university students. These results align with and extend previous research, providing robust evidence for the dual benefits of BAT in this population.

The significant improvement in subjective happiness observed in the intervention group supports the foundational principles of BAT, which emphasize increasing engagement in meaningful activities to boost mood and overall well-being (Armento et al., 2012). This outcome is consistent with previous studies that have demonstrated the efficacy of BAT in reducing depressive symptoms and enhancing positive emotional states (Armento et al., 2012). The structured approach of BAT, which helps individuals identify and pursue activities aligned with their values, appears to be particularly effective in a university setting where students often face high levels of stress and pressure.

The improvement in subjective happiness is also supported by the broader literature on cognitive-behavioral interventions. Bernharðsdóttir et al. (2013) found that brief cognitive-behavioral group therapy significantly reduced psychological distress among female Icelandic university students (Bernharðsdóttir et al., 2013). This aligns with our findings, suggesting that structured behavioral interventions can have a substantial positive impact on student well-being. The consistency of these results across different cultural contexts and intervention formats highlights the robustness and versatility of cognitive-behavioral approaches in enhancing happiness and reducing distress.

The significant enhancement of creative thinking in the intervention group underscores the interconnectedness of psychological well-being and cognitive functioning. Previous research has established that positive emotional states can facilitate creative thinking by promoting cognitive flexibility and divergent thinking (Smith & Strong, 2018). Our findings are in line with these theoretical perspectives, suggesting that the increase in subjective happiness mediated by BAT likely contributed to improved creative thinking abilities.

The use of the Torrance Tests of Creative Thinking (TTCT) in this study provides a comprehensive assessment of various dimensions of creativity, such as fluency, originality, and elaboration (Miller et al., 2013). The observed improvements across these dimensions indicate that BAT not only enhances general well-being but also specifically targets cognitive processes essential for creativity. This aligns with findings from Sukarso et al. (2022), who demonstrated that providing creative teaching materials improved students' creative dispositions and thinking skills (Sukarso et al., 2022). By integrating creative activities into the BAT framework, this study extends the application of BAT to cognitive domains, highlighting its potential to foster innovation and problem-solving skills in students.

The significant effects of BAT on both subjective happiness and creative thinking have important implications for educational practices and student support services. Universities could benefit from incorporating BAT into their mental health and wellness programs, providing students with structured opportunities to engage in meaningful and enjoyable activities. This could not only improve students' emotional well-being but also enhance their academic performance and creative potential.

The integration of BAT with educational strategies that promote creativity could create a synergistic effect, further enhancing student outcomes. For instance, project-based learning models that foster creative thinking skills, as

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discussed by Senjayani (2021), could be combined with BAT to provide a holistic approach to student development. This combined approach could help students manage academic stress while also encouraging innovation and creative problem-solving (Senjayani, 2021).

Moreover, the findings suggest that educational interventions should consider the behavioral and motivational components of learning. Geier (2020) found that specific teacher behaviors could mediate the relationship between students' perceived importance of these behaviors and their effort. This indicates that interventions like BAT, which emphasize active engagement and value-driven activities, could complement educational strategies aimed at increasing student motivation and effort (Geier, 2020).

The effectiveness of BAT in enhancing subjective happiness also suggests its potential in addressing psychological distress among students. Given the high prevalence of anxiety, depression, and academic burnout in university populations (Oloidi et al., 2022), BAT could serve as a valuable intervention to mitigate these issues. By focusing on positive engagement and value-driven activities, BAT provides a practical and accessible approach for students to improve their mental health and overall quality of life.

The significant reduction in psychological distress observed in our study is consistent with the findings of Salsabilla, Wahyunengsih, and Sari (2022), who demonstrated the effectiveness of cognitive-behavioral therapy techniques in reducing academic anxiety among final-year students (Salsabilla et al., 2022). The overlap between BAT and other cognitive-behavioral approaches suggests that these interventions share common mechanisms, such as promoting positive behavior change and challenging negative thought patterns, which are effective in reducing distress and enhancing well-being.

The long-term benefits of BAT align with the findings of Harahap et al. (2022), who demonstrated that group counseling using rational emotive behavior therapy had lasting effects on reducing cheating behavior among students. The emphasis on behavior change and value-driven activities in both interventions highlights the importance of addressing underlying motivational factors to create enduring positive outcomes (Harahap et al., 2022).

While the findings of this study are promising, several limitations should be acknowledged. The sample size was relatively small, and the study was conducted within a single university setting, which may limit the generalizability of the results. Future research should aim to replicate these findings with larger and more diverse samples to confirm the effectiveness of BAT across different populations and educational contexts.

Additionally, the study relied on self-reported measures of subjective happiness and creative thinking, which may be subject to social desirability bias. Incorporating objective measures of creative output, such as evaluations of students' academic and creative projects, could provide a more comprehensive assessment of the intervention's impact.

Further research is also needed to explore the mechanisms through which BAT enhances creative thinking. While the increase in subjective happiness likely plays a role, other factors such as increased cognitive flexibility and reduced anxiety may also contribute to the observed improvements. Investigating these mechanisms could provide deeper insights into how BAT influences cognitive processes and inform the development of more targeted interventions.

In conclusion, this study provides robust evidence for the effectiveness of Behavioral Activation Therapy in enhancing subjective happiness and creative thinking among university students. The significant improvements observed in both outcomes highlight the potential of BAT as a valuable intervention for promoting psychological well-being and cognitive functioning in this population. By integrating BAT into student support services and educational practices, universities can create a supportive environment that fosters both emotional health and academic success. Further research is needed to replicate these findings and explore the underlying mechanisms of BAT's effects, but the current results underscore its promise as a comprehensive approach to student development.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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