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Research Article

EMPOWERING ADOLESCENTS: MINDFULNESS-BASED INTERVENTIONS FOR ENHANCED WELL-BEING

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Abstract

Background: Adolescence is a crucial period marked by profound physical, emotional, and social changes, often leading to heightened stress, anxiety, and emotional fluctuations. There is a worrying rise in mental health issues such as anxiety and depression among adolescents, impacting their school performance, friendships, and future prospects. Mindfulness-Based Interventions (MBIs) have gained attention for their potential to enhance mental health by promoting present-moment awareness and emotional regulation. This study aims to investigate the effects of the implemented mindfulness-based module on participants' emotion regulation, psychological well-being, life satisfaction, and happiness. **Methods:** A randomized controlled trial (RCT) design was implemented, with eighty participants selected through purposive sampling and randomly assigned to either an experimental group or a control group. The experimental group participated in structured mindfulness sessions over five weeks, while the control group received no intervention. Pre-intervention, post-intervention, and follow-up assessments were conducted using the Emotion Regulation Questionnaire (ERQ), Psychological Wellbeing (PWB) Scale, Satisfaction with Life Scale (SWLS), and Oxford Happiness Questionnaire (OHQ) to measure changes in emotion regulation, psychological well-being, life satisfaction, and happiness. **Results:** The analysis of covariance of the data indicated a significant effect of the mindfulness-based intervention on the posttest and follow-up scores for emotion regulation, psychological well-being, life satisfaction, and happiness among adolescents. **Conclusion:** The study has uncovered insights into how mindfulness-based interventions achieve their effects. Moreover, it has collected valuable data that can shape future practices and aid in devising strategies to promote emotional and psychological well-being among adolescents.

Keywords: Mindfulness-based interventions, Adolescents, Emotion Regulation, Psychological well-being, Satisfaction with life, Happiness, Randomized control trial (RCT)

INTRODUCTION

Adolescence is a crucial period marked by profound physical, emotional, and social changes. During these years, teenagers face increased academic pressures, social challenges, and the task of forming their identities (Coleman, 2022). It's a time when the transition from childhood to adulthood brings about heightened stress, anxiety, and emotional ups and downs. Many adolescents today are dealing with mental health issues, and studies show a worrying rise in anxiety, depression, and other related disorders among young people (Meherali, Punjani, et al. 2021; Benton, Boyd and Njoroge, 2021). These mental health challenges can affect their school performance, friendships, and future prospects (Hoover and Bostic, 2021). Therefore, it's more important than ever to find effective ways to support their emotional and psychological wellbeing. Mindfulness-Based Interventions (MBIs) have gained attention as a promising way to boost mental health and manage stress. Mindfulness is about being fully present in the moment, paying attention to thoughts, feelings, and bodily sensations without judgment (Alvear, Soler and Cebolla, 2022). Programs like Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) are designed to teach these skills through practices such as meditation, body scanning, and mindful breathing (Zhang, Lee, Mak, Ho and Wong, 2021). These interventions aim to help people regulate their emotions, reduce symptoms of anxiety and depression, and improve their overall psychological health. For teenagers, MBIs can be particularly helpful. They can learn to cope better with stress, become more self-aware, and develop a sense of calm and clarity in their daily lives (Thomas, 2023).

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By incorporating mindfulness into their routines, adolescents can build resilience and better handle the challenges they face during this pivotal stage of life (Kane, 2020). Research on MBIs has shown promising results in enhancing adolescent wellbeing. In a study done by Schussler, Mahfouz, et al. (2021), on the Learning to BREATHE program revealed that high-risk adolescents experienced significant improvements in stress management, emotion regulation, and internalizing symptoms. Those who practiced mindfulness regularly showed the most benefits, with mindful breathing being particularly accessible and effective for students. Contextual factors were found to influence the uptake and success of these practices, highlighting the need for tailored interventions. A meta-analysis done by Zhang, Chen, Wu and Guo (2022), of 28 randomized controlled trials (RCTs) involving 7,943 participants found that MBIs had a small but significant effect on reducing anxiety, depression, and stress among children and adolescents, although they did not significantly impact overall wellbeing. Factors such as intervention duration and type influenced outcomes, suggesting that shorter, more tailored MBIs could be beneficial. Another extensive meta-analysis done by Dunning, Tudor, et al. (2022), of 66 RCTs with 20,138 participants compared MBIs against both passive and active control groups. The study found that MBIs improved anxiety/stress, attention, executive functioning, and behavior when compared to passive controls. However, these effects were not sustained in long-term follow-ups, and no consistent advantage was seen in universal versus selective interventions. The authors called for more high-quality studies to better understand the potential of MBIs in supporting youth mental health. Despite these positive findings, gaps remain in understanding the long-term effects and specific mechanisms of MBIs. Addressing these gaps, the current study aims to

explore how structured mindfulness practices can be integrated into adolescents' lives to enhance emotion regulation, psychological wellbeing, satisfaction with life and happiness. The study also aims to study the long-term effects of the intervention on adolescent's wellbeing.

MATERIALS AND METHODS

Ethical approval

The study was approved by the Institutional Ethical Committee of Shree Guru Gobind Singh Tricentenary University (Approval No: SGTU/FBSC/ECC/2021/22) and conducted in accordance with the ethical guidelines of the American Psychological Association (2017).

Study area

Our study was conducted across multiple educational settings, including SGT University in Haryana, and Maharaja Surajmal Institute and Soni Academy in Delhi, selected for their varied academic environments, geographical locations, and student demographics. This diverse selection aimed to capture a broad spectrum of experiences, enhancing our understanding of the research topic within different educational frameworks and regional contexts.

Design of the study

We conducted a randomized controlled trial (RCT) to assess the efficacy of a mindfulness-based intervention for adolescents aged 14-19. Participants were randomly assigned to either an Experimental Group or a Control Group. The Experimental Group underwent a structured five-session mindfulness program, while the Control Group received no intervention, serving as a comparison baseline.

Participants of the study

The study included 80 adolescents who participated voluntarily after the research was publicized, with 93 expressing initial interest. Pre-intervention evaluations were conducted to gather sociodemographic details and administer the Emotion Regulation Questionnaire, Psychological Wellbeing Scale, Satisfaction with Life Scale, and Oxford Happiness Questionnaire to establish baseline data. Participants met the criteria of being aged 14-19, proficient in Hindi or English, and not undergoing psychotherapy. Using purposive sampling, 80 suitable participants were selected and randomly assigned to either the treatment or control groups (40 each). The treatment group underwent a Mindfulness-Based Intervention, while the control group received no intervention. After accounting for dropouts, post-intervention assessments included 36 in the treatment group and 35 in the control group. A follow-up assessment was conducted three weeks later, with 36 participants in the treatment group and 32 in the control group.

Tools for data collection

Sociodemographic Details: A semi structured form was designed to collect comprehensive personal details from participants, covering aspects such as age, gender, educational background, family type, and number of siblings. This approach provided a holistic understanding of each participant, supporting thorough data analysis in the study's context.

Emotion Regulation Questionnaire (ERQ): The Emotion Regulation Questionnaire (ERQ) by Gross and John (2003) assesses two emotion regulation strategies: cognitive reappraisal and expressive suppression, using 10 items on a 7-point Likert scale. Higher scores indicate a greater tendency for cognitive reappraisal or emotional suppression.

Psychological Wellbeing (PWB): The Psychological Well-Being (PWB) Scale, developed by Carol D. Ryff (1995), measures six dimensions of well-being: autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance. We used the 18-item version to assess psychological well-being in adolescents aged 14-19, providing insights into their self-perception and life satisfaction.

Satisfaction with Life (SWLS): The Satisfaction with Life Scale (SWLS), developed by Ed Diener and colleagues (1993), is a brief measure of overall life satisfaction. It consists of five items rated on a 7-point scale, assessing individuals' cognitive evaluations of their life satisfaction. Scores reflect varying levels of satisfaction, influenced by social relationships, personal growth, and other life domains.

Oxford Happiness Questionnaire (OHQ): The Oxford Happiness Questionnaire (OHQ), developed by Michael Argyle and Peter Hills (2002), measures subjective well-being and happiness through 29 items rated on a 6-point Likert scale. It provides a comprehensive view of happiness, life satisfaction, and positive affect. The OHQ is widely used in research to explore happiness levels and factors influencing well-being among adolescents aged 14-19.

PROCEDURE

Participants voluntarily enrolled in the study after receiving detailed information, with confidentiality strictly maintained. They were randomly assigned to either an experimental or control group, both completing a pretest questionnaire on emotion regulation, psychological well-being, life satisfaction, and happiness. The experimental group engaged in structured one-hour mindfulness sessions weekly for five weeks, led by an associate clinical psychologist, while the control group received no intervention. At the end of the intervention, both groups completed a post-test questionnaire to compare scores, and a follow-up test was conducted three weeks later to assess long-term effects. No financial compensation was provided for participation.

Intervention Overview

Session 1: Participants explored the essence of mindfulness through present-moment awareness. They learned the anchor breathing and five senses techniques, set personal mindfulness goals, and were assigned homework on gratitude and breathing practices.

Session 2: This session focused on bodily awareness and introduced the mindful STOP technique for intentional responses. Participants engaged in guided body scans and were assigned homework to journal positive experiences and practice the STOP technique.

Session 3: Participants learned about mindful listening to improve communication and empathy. They discussed

strategies for effective listening and the iceberg metaphor for deeper connections, with homework to practice these techniques in daily conversations.

Session 4: The session centered on emotional awareness, discussing the impact of gender stereotypes. Participants practiced the RAIN technique for navigating emotions and completed homework involving emotional awareness techniques and journaling reflections.

Session 5: Participants explored the relationship between thoughts, emotions, and behaviors. They learned to reframe negative thoughts and shared insights from the program. Homework included practices for releasing unhelpful thoughts and journaling reflections on thought patterns.

Each session provided practical tools to enhance emotional regulation and well-being through mindfulness.

Data analysis

The data were analyzed using descriptive statistics and ANCOVA (Analysis of Covariance). Descriptive statistics offered insights into participants' demographic characteristics and baseline scores for emotion regulation, psychological well-being, life satisfaction, and happiness. ANCOVA was utilized to compare post-test and follow-up scores between the experimental and control groups, controlling for potential confounding variables such as age and gender. This method enabled the assessment of the mindfulness-based intervention's efficacy by identifying significant outcome differences between the groups while accounting for any baseline disparities.

RESULTS

The primary objective of this study is to investigate the impact of Mindfulness-Based Intervention on the overall well-being of adolescents, including variables, emotion regulation, psychological wellbeing, satisfaction with life and happiness. The outcomes, following a thorough analysis using ANCOVA are outlined in the following tables. Table 1 reveals a significant effect of the Mindfulness-Based Intervention (MBI) on Cognitive Reappraisal (CR) in adolescents across three time points: pretest, post-test, and follow-up. At pretest, the experimental group (N = 40) scored a mean CR of 22.44 (SD = 3.72), while the control group (N = 40) was at 23.00 (SD = 2.95). Post-intervention, the experimental group (N = 36) increased to 26.50 (SD = 3.01), and the control group (N = 35) decreased to 21.62 (SD = 3.24). At follow-up, the experimental group maintained a mean of 25.88 (SD = 2.32), while the control group fell to 21.25 (SD = 3.06). The confidence intervals for the experimental group were [21.18, 23.70] at pretest, [25.47, 27.52] at post-test, and [25.10, 26.67] at follow-up. These findings confirm that the MBI effectively enhances cognitive reappraisal skills in adolescents. Table 2 shows the ANCOVA results for the Mindfulness-Based Intervention (MBI) on Cognitive Reappraisal (CR) among adolescents at three assessment points: pretest, post-test, and follow-up. The pretest analysis reveals no significant difference between groups ($F = 0.010$, $p = 0.992$), indicating the MBI had no effect before the intervention. In contrast, the post-test results show a significant effect ($F=40.927$, $p < .001$), with substantial improvement in CR. Similarly, at follow-up, the MBI significantly affected CR ($F = 49.96$, $p < .001$), confirming the intervention's sustained positive impact. Overall, these findings demonstrate the MBI's effectiveness in enhancing cognitive reappraisal skills in adolescents. Table 3 shows the effect of the Mindfulness-Based Intervention (MBI) on Expressive Suppression (ES) in adolescents at three time points: pretest, post-test, and follow-up. At pretest, the experimental group (N = 40) had a mean ES score of 12.27 (SD = 1.71), similar to the control group (N = 40) at 12.28 (SD = 1.72). Post-intervention, the experimental group (N = 36) significantly decreased to 11.13 (SD = 1.53), while the control group (N = 35) increased to 12.90 (SD = 1.61). At follow-up, the experimental group's mean was 11.80 (SD = 1.87) versus the control group's 13.09 (SD = 1.55). Overall, these results indicate that the MBI effectively reduces expressive suppression in adolescents, particularly evident in the post-test and follow-up.

Table 4 shows the ANCOVA results for the Mindfulness-Based Intervention (MBI) on Expressive Suppression (ES) in adolescents at three assessment points: pretest, post-test, and follow-up. The pretest analysis indicates no significant difference between groups ($F = 0.106$, $p = 0.745$), suggesting the MBI had no effect before the intervention. In contrast, post-test results reveal a significant effect of the MBI ($F = 21.15$, $p < .001$), indicating a substantial decrease in expressive suppression. The follow-up assessment also shows a significant effect ($F = 9.35$, $p = .003$), confirming the MBI's positive impact on expressive suppression skills. Overall, these findings demonstrate the effectiveness of the MBI in reducing expressive suppression, especially noted in the post-test and follow-up. Table 5 shows the descriptive analysis of the Mindfulness-Based Intervention (MBI) on Psychological Well-Being (PWB) in adolescents at three time points: pretest, post-test, and follow-up. At pretest, the experimental group (N = 40) had a mean PWB score of 78.16 (SD = 3.96), while the control group (N = 40) scored 78.71 (SD = 3.61). The total mean for the sample (N = 80) was 78.42 (SD = 3.78). Post-intervention, the experimental group significantly increased to 92.77 (SD = 5.24), compared to the control group's increase to 79.75 (SD = 5.15). The follow-up showed the experimental group maintaining a high mean PWB of 92.22 (SD = 4.92), while the control group had a mean of 79.56 (SD = 4.72). Overall, these results indicate that the MBI effectively enhances psychological well-being, particularly noted in the post-test and follow-up assessments.

Table 6 summarizes the ANCOVA results for the Mindfulness-Based Intervention (MBI) on Psychological Well-Being (PWB) in adolescents across three assessment points: pretest, post-test, and follow-up. The pretest shows no significant difference between groups ($F = 0.218$, $p = 0.642$). In contrast, the post-test reveals a significant effect of the MBI, with $F = 112.480$ and $p < .001$, indicating a substantial increase in PWB. The follow-up assessment also demonstrates a significant effect ($F = 116.356$, $p < .001$), showing that the MBI's positive impact on PWB is maintained. Overall, these findings affirm the MBI's effectiveness in enhancing psychological well-being among adolescents. Table 7 shows the impact of the Mindfulness-Based Intervention (MBI) on Satisfaction with Life (SWL) in adolescents at three time points: pretest, post-test, and follow-up. At pretest, the experimental group (N = 40) has a mean SWL of 22.94 (SD = 1.65), similar to the control group (N = 40) at 22.93 (SD = 1.75).

Table 1. The results of descriptive analysis indicating the effect of Mindfulness-based intervention on Cognitive Reappraisal (CR) among adolescents

						95% confidence interval for mean	
		N	Mean	SD	SE	Lower Bound	Upper Bound
CR pretest	Experimental group	40	22.44	3.72	0.62	21.18	23.70
	Control group	40	23	2.95	0.52	21.93	24.06
	Total	80	22.70	3.36	0.40	21.89	23.52
CR post-test	Experimental group	36	26.50	3.01	0.50	25.47	27.52
	Control group	35	21.62	3.24	0.57	20.45	22.79
	Total	71	24.20	3.95	0.47	23.24	25.16
CR follow-up	Experimental group	36	25.88	2.32	0.38	25.10	26.67
	Control group	32	21.25	3.06	0.54	20.14	22.35
	Total	68	23.70	3.55	0.43	22.84	24.56

Table 2. Results of analysis of covariance for the effect of of Mindfulness-based intervention on Cognitive Reappraisal (CR) among adolescents

		Sum of squares	Df	Mean square	*F* value	Sig.
CR pretest	Between groups	0.112	1	0.112	0.010	0.992
	Within groups	0.113	79	0.113		
	Total	42539	80			
CR post-test	Between groups	393.60	1	396.60	40.927	<.001
	Within groups	396.30	70	396.30		
	Total	43614	71			
CR follow-up	Between groups	364.56	1	364.56	49.96	<.001
	Within groups	364.56	67	364.56		
	Total	39060	68			

Table 3. The results of descriptive analysis indicating the effect of Mindfulness-based intervention on Expressive Suppression (ES) among adolescents

						95% confidence interval for mean	
		N	Mean	SD	SE	Lower Bound	Upper Bound
ES pretest	Experimental group	40	12.27	1.71	0.28	11.69	12.85
	Control group	40	12.28	1.72	0.30	11.65	12.90
	Total	80	12.27	1.70	0.20	11.86	12.69
ES post-test	Experimental group	36	11.13	1.53	0.25	10.62	11.65
	Control group	35	12.90	1.61	0.28	12.32	13.48
	Total	71	11.97	1.79	0.21	11.97	11.53
ES follow-up	Experimental group	36	11.80	1.87	0.31	11.16	12.44
	Control group	32	13.09	1.55	0.27	12.53	13.65
	Total	68	12.41	1.83	0.22	11.96	12.85

Table 4. Results of analysis of covariance for the effect of of Mindfulness-based intervention on Expressive Suppression (ES) among adolescents

		Sum of squares	Df	Mean square	*F* value	Sig.
ES pretest	Between groups	.313	1	.313	.106	.745
	Within groups	.313	79	.313		
	Total	12555	80			
ES post-test	Between groups	50.66	1	50.66	21.15	<.001
	Within groups	50.66	70	50.66		
	Total	10392				
ES follow-up	Between groups	28.11	1	28.11	9.35	.003
	Within groups	28.11	67	28.11		
	Total	10702	68			

Table 5. The results of descriptive analysis indicating the effect of Mindfulness-based intervention on Psychological well-being (PWB) among adolescents

						95% confidence interval for mean	
		N	Mean	SD	SE	Lower Bound	Upper Bound
PWB pretest	Experimental group	40	78.16	3.96	0.66	76.82	79.50
	Control group	40	78.71	3.61	0.63	77.41	80.02
	Total	80	78.42	3.78	0.45	77.51	79.34
PWB post-test	Experimental group	36	92.77	5.24	0.87	91	94.55
	Control group	35	79.75	5.15	0.91	77.89	81.60
	Total	71	86.64	8.34	1.01	84.62	88.66
PWB follow-up	Experimental group	36	92.22	4.92	0.82	90.55	93.88
	Control group	32	79.56	4.72	0.83	79.56	77.85
	Total	68	86.26	7.96	0.96	84.33	88.19

Table 6. Results of analysis of covariance for the effect of of Mindfulness-based intervention on Psychological well-being (PWB) among adolescents

		Sum of squares	Df	Mean square	*F* value	Sig.
PWB pretest	Between groups	3.20	1	3.20	.218	.642
	Within groups	3.20	78	3.20		
	Total	492560	80			
PWB post-test	Between groups	3108.52	1	3108.52	112.480	<.001
	Within groups	3108.52	69	3108.52		
	Total	533232	71			
PWB follow-up	Between groups	2715.13	1	2715.13	116.356	<.001
	Within groups	2715.13	67	2715.13		
	Total	510284	68			

Table 7. The results of descriptive analysis indicating the effect of Mindfulness-based intervention on Satisfaction with Life (SWL) among adolescents

						95% confidence interval for mean	
		N	Mean	SD	SE	Lower Bound	Upper Bound
SWL pretest	Experimental group	40	22.94	1.65	0.27	22.38	23.50
	Control group	40	22.93	1.75	0.31	22.30	23.57
	Total	80	22.94	1.69	0.20	22.53	23.35
SWL post-test	Experimental group	36	25.36	1.94	0.32	24.70	26.01
	Control group	35	23.46	1.90	0.33	22.78	24.15
	Total	71	24.47	2.13	0.25	23.95	24.98
SWL follow-up	Experimental group	36	25.47	1.84	0.30	24.84	26.09
	Control group	32	23.15	1.83	0.32	22.15	23.81
	Total	68	24.38	2.16	0.26	23.85	24.90

Table 8. Results of analysis of covariance for the effect of of Mindfulness-based intervention on Satisfaction with Life (SWL) among adolescents

		Sum of squares	Df	Mean square	*F* value	Sig.
SWL pretest	Between groups	1.80	1	1.80	.632	.429
	Within groups	1.80	79	1.80		
	Total	42452	80			
SWL post-test	Between groups	58.67	1	58.67	16.39	<.001
	Within groups	58.67	70	58.67		
	Total	42801	71			
SWL follow-up	Between groups	90.86	1	90.86	26.87	<.001
	Within groups	90.86	67	90.86		
	Total	40740	68			

Table 9. The results of descriptive analysis indicating the effect of Mindfulness-based intervention on Happiness (H) among adolescents

						95% confidence interval for mean	
		N	Mean	SD	SE	Lower Bound	Upper Bound
H pretest	Experimental group	40	105.58	3.48	0.58	104.40	106.76
	Control group	40	104.62	2.92	0.51	103.56	105.68
	Total	80	105.13	3.24	0.39	104.34	105.91
H post-test	Experimental group	36	115.72	5.25	0.87	113.94	117.49
	Control group	35	105.50	3.61	0.63	104.19	106.80
	Total	71	110.91	6.84	0.83	109.25	112.56
H follow-up	Experimental group	36	114.25	5.66	0.94	112.33	116.16
	Control group	32	104.75	3.68	0.65	103.41	106.08
	Total	68	109.77	6.77	0.82	108.14	111.41

After the intervention, the experimental group's mean SWL rises significantly to 25.36 (SD = 1.94), while the control group increases to 23.46 (SD = 1.90). At follow-up, the experimental group maintains a mean of 25.47 (SD = 1.84), compared to the control group's 23.15 (SD = 1.83). Overall, these results indicate that the MBI significantly enhances adolescents' satisfaction with life, especially in post-test and follow-up assessments. Table 8 presents the ANCOVA results on the Mindfulness-Based Intervention (MBI) and its effect on Satisfaction with Life (SWL) in adolescents across three points: pretest, post-test, and follow-up. At the pretest, there is no significant difference between groups (sum of squares = 1.80, F = 0.632, p = 0.429), indicating no effect of the MBI prior to the intervention. In the post-test, the MBI shows a significant effect (sum of squares = 58.67, F = 16.39, p < .001), indicating improved satisfaction with life. The follow-up results reinforce this finding (sum of squares = 90.86, F = 26.87, p < .001), demonstrating a significant and sustained increase in SWL among adolescents due to the MBI.

Table 9 summarizes the effect of the Mindfulness-Based Intervention (MBI) on Happiness among adolescents at three points: pretest, post-test, and follow-up. At pretest, the experimental group (N = 40) has a mean happiness score of 105.58 (SD = 3.48), while the control group (N = 40) scores 104.62 (SD = 2.92), leading to an overall mean of 105.13 (SD = 3.24). Post-intervention, the experimental group shows a significant increase in happiness, achieving a mean score of 115.72 (SD = 5.25) compared to the control group's 105.50 (SD = 3.61), with an overall mean of 110.91 (SD = 6.84). At follow-up, the experimental group maintains a high mean score of 114.25 (SD = 5.66), while the control group scores 104.75 (SD=3.68), resulting in an overall mean of 109.77 (SD = 6.77).

Table 10. Results of analysis of covariance for the effect of Mindfulness-based intervention on Happiness (H) among adolescents

		Sum of squares	Df	Mean square	*F* value	Sig.
H pretest	Between groups	22.05	1	22.05	2.14	.147
	Within groups	22.05	79	22.05		
	Total	880724	80			
H post-test	Between groups	1737.10	1	1737.10	83.110	<.001
	Within groups	1737.10	70	1737.10		
	Total	875530	71			
H follow-up	Between groups	1528.94	1	1528.94	65.32	<.001
	Within groups	1528.94	67	1528.94		
	Total	822577	68			

These findings indicate that the MBI significantly enhances happiness among adolescents, especially in the experimental group. Table 10 summarizes the ANCOVA results examining the impact of the Mindfulness-Based Intervention (MBI) on Happiness among adolescents at three measurement points: pretest, post-test, and follow-up. The pretest analysis shows no significant difference between the experimental and control groups, with a mean square of 22.05, an F value of 2.14, and a significance level of .147. In contrast, the post-test results indicate a substantial effect of the MBI, with a mean square of 1737.10, an F value of 83.110, and a significance level of less than .001, reflecting a significant increase in happiness for the experimental group. Similarly, the follow-up analysis reveals a significant effect as well, with a mean square of 1528.94, an F value of 65.32, and a significance level of less than .001. These findings highlight the MBI's effectiveness in enhancing happiness among adolescents, particularly noted immediately after the intervention and at follow-up.

DISCUSSION

The findings of this study highlight the transformative impact of a Mindfulness-Based Intervention (MBI) on the emotional and psychological landscape of adolescents. As this developmental stage is often marked by heightened emotional fluctuations and stress, the enhancement in cognitive reappraisal, expressive suppression, psychological well-being, life satisfaction, and happiness underscores the potential of mindfulness practices to equip young individuals with essential coping strategies. The significant improvements observed in cognitive reappraisal suggest that adolescents who participated in the MBI are better able to reinterpret challenging situations, which can lead to healthier emotional responses. This cognitive flexibility is crucial during adolescence, as it fosters resilience against stressors and enhances overall emotional regulation. The ability to shift perspectives and engage in adaptive thinking can empower these individuals to navigate the complexities of their environment more effectively. In addition to cognitive changes, the MBI appears to promote emotional expression by reducing expressive suppression. This is particularly meaningful as it encourages adolescents to openly express their feelings rather than bottling them up, which is often linked to emotional distress. By facilitating healthier emotional expression, the MBI may help prevent the development of more severe mental health issues later in life, fostering a culture of emotional openness among peers. The significant enhancements in psychological well-being, life satisfaction, and happiness reflect a holistic improvement in the participants' lives. These constructs are deeply intertwined, influencing not just individual happiness but also social relationships and academic performance. Adolescents who experience higher levels of well-being and life satisfaction are more likely to engage positively with their peers and educational pursuits, laying a foundation for a fulfilling adulthood.

Moreover, the implications of these findings extend beyond individual benefits; they advocate for the incorporation of mindfulness practices into educational settings. Schools can serve as pivotal environments for implementing such interventions, promoting mental health awareness and equipping students with tools to handle stress effectively. By fostering emotional intelligence and resilience, educational institutions can play a significant role in shaping healthier future generations.

Conclusion

This study illustrates the significant benefits of Mindfulness-Based Interventions in enhancing emotional regulation and overall well-being among adolescents. The improvements in cognitive reappraisal, expressive suppression, psychological well-being, life satisfaction, and happiness underscore the potential of mindfulness practices as effective tools for promoting mental health during this critical developmental stage. Looking ahead, future research should explore the long-term effects of MBIs on adolescents' mental health and investigate how these interventions can be adapted for diverse populations and settings. Additionally, examining the scalability and integration of mindfulness programs in educational curricula could provide valuable insights into fostering resilience and emotional intelligence in youth. Ultimately, continued exploration of mindfulness practices will contribute to a deeper understanding of their impact on mental health and well-being, paving the way for more effective interventions in the future.

REFERENCES

Alvear D, Soler J, Cebolla A. Meditators' non-academic definition of mindfulness. *Mindfulness*. 2022 Jun;13(6):1544-54.

Benton TD, Boyd RC, Njoroge WF. Addressing the global crisis of child and adolescent mental health. *JAMA pediatrics.* 2021 Nov 1;175(11):1108-10.

Coleman JC. The nature of adolescence. InYouth Policy in the 1990s 2022 Dec 29 (pp. 8-27). Routledge.

Diener ED, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *Journal of personality assessment*. 1985 Feb 1;49(1):71-5.

Dunning D, Tudor K, Radley L, Dalrymple N, Funk J, Vainre M, Ford T, Montero-Marin J, Kuyken W, Dalgleish T. Do mindfulness-based programmes improve the cognitive skills, behaviour and mental health of children and adolescents? An updated meta-analysis of randomised controlled trials. *BMJ Ment Health.* 2022 Aug 1;25(3):135-42.

Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships,

and well-being. *Journal of personality and social psychology.* 2003 Aug;85(2):348.

Hills P, Argyle M. The Oxford Happiness Questionnaire: a compact scale for the measurement of psychological well-being. *Personality and individual differences.* 2002 Nov 1;33(7):1073-82.

Hoover S, Bostic J. Schools as a vital component of the child and adolescent mental health system. *Psychiatric services*. 2021 Jan 1;72(1):37-48.

Kane M. Enhanced well-being through mindfulness: Supporting the gifted adolescent journey. Gifted Child Today. 2020 Apr;43(2):116-23.

Meherali S, Punjani N, Louie-Poon S, Abdul Rahim K, Das JK, Salam RA, Lassi ZS. Mental health of children and adolescents amidst COVID-19 and past pandemics: a rapid systematic review. *International journal of environmental research and public health*. 2021 Mar 26;18(7):3432.

Morrish L, Rickard N, Chin TC, Vella-Brodrick DA. Emotion regulation in adolescent well-being and positive education. *Journal of Happiness Studies.* 2018 Jun;19:1543-64.

Pavot W, Diener ED, Colvin CR, Sandvik E. Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of personality assessment.* 1991 Aug 1;57(1):149-61.

Pavot W. Review of the Satisfaction with Life Scale. Psychological Assessment. 1993.

Pavot W, Diener E. The satisfaction with life scale and the emerging construct of life satisfaction. *The journal of positive psychology.* 2008 Apr 1;3(2):137-52.

Ryff CD, Keyes CL. The structure of psychological well-being revisited. *Journal of personality and social psychology*. 1995 Oct;69(4):719.

Ryff C, Almeida DM, Ayanian JS, Carr DS, Cleary PD, Coe C, Davidson R, Krueger RF, Lachman ME, Marks NF, Mroczek DK. National survey of midlife development in the United States (MIDUS II), 2004-2006.

Schussler DL, Oh Y, Mahfouz J, Levitan J, Frank JL, Broderick PC, Mitra JL, Berrena E, Kohler K, Greenberg MT. Stress and well-being: A systematic case study of adolescents' experiences in a mindfulness-based program. *Journal of Child and Family Studies.* 2021 Feb;30:431-46.

Thomas K. Implementation of a mindfulness intervention to increase adolescent resilience in an after-school program: a quality improvement project.

Zhang D, Lee EK, Mak EC, Ho CY, Wong SY. Mindfulness-based interventions: an overall review. *British medical bulletin*. 2021 Jun;138(1):41-57.

Zhang Y, Chen S, Wu H, Guo C. Effect of Mindfulness on Psychological Distress and Well-being of Children and Adolescents: a Meta-analysis. *Mindfulness*. 2022 Feb;13(2):285-300.

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