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Mindfulness-Based Learning Interventions on Reducing Students' Anxiety Levels

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ABSTRACT

Anxiety in adolescents is a serious psychological barrier that affects students' academic performance and emotional well-being in high school, requiring effective and integrated intervention strategies in the educational environment. This study aims to find out the effectiveness of mindfulness-based learning interventions in reducing the level of anxiety of students at SMPN Satu Atap Terpadu Bungursari, Purwakarta. The researcher used a quantitative research paradigm with a quasi-experimental design (Nonequivalent Control Group Design), this study involved 60 students with moderate to high levels of anxiety who were selected through purposive sampling and divided into Experimental Group (n=30) and Control Group (n=30). The experimental group received a structured mindfulness program for 8 weekly sessions, while the control group received no intervention. Data was collected using a valid Adolescent Anxiety Scale through pre-test and post-test procedures, then analyzed using an Independent T Test on Gain Score. The results showed a significant difference ($p < 0.001$) in the decrease in anxiety scores, where the Experimental Group experienced an average decrease of 22.76 points compared to the Control Group which only experienced a natural decrease of 2.77 points. In conclusion, mindfulness interventions have been proven to be statistically and empirically effective as a method of anxiety mitigation.

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1. INTRODUCTION

Anxiety (*Anxiety*) in adolescence is an increasingly prominent mental health challenge in the context of contemporary education (Kusuma & Arifin, 2022). Anxiety, which is defined as an emotional state characterized by feelings of tension, worry, and physical reactions such as increased heart rate, severely interferes with the student's capacity to fully participate in the learning process and achieve optimal academic potential (Amalia, 2024). Meanwhile, in the school environment, anxiety can manifest as social anxiety, exam anxiety, or public school anxiety, which collectively damage students'

psychosocial well-being (Wahyudi, 2021). Based on the results of studies that have been conducted, the increasing prevalence of anxiety symptoms in adolescents post-pandemic highlights the urgent need for integrated preventive and promotive interventions in schools (Setiawan & Hartono, 2023). Junior High School (SMP) is a critical phase of development, where biological changes and the demands of transition to adulthood make students very vulnerable to stress and anxiety.

In an effort to respond to these challenges, interventions based on *mindfulness* has gained global attention. *Mindfulness* or Full Awareness, here defined as the ability to deliberately direct attention to an experience that arises in the moment, without judgment, has been recognized as an effective strategy to improve emotion regulation and reduce anxiety symptoms (Susanto, 2021). Mechanically, *mindfulness* works by increasing metacognitive awareness, allowing individuals to observe anxious thoughts and feelings as passing mental events, rather than as threats of reality to be responded to (Handayani et al., 2024). Meanwhile, a number of recent studies in the 2021–2025 range support the effectiveness of interventions *mindfulness* which is adjusted for school age in reducing symptoms of depression and anxiety (Utami & Hidayat, 2022). However, there are controversial hypotheses regarding long-term efficacy and moderation factors. Some findings suggest that the anxiety-reducing effects may diminish over time, and the effectiveness of interventions is highly dependent on the level of adherence (Aji & Putri, 2023). In addition, there is also a need to validate the implementation of the program *mindfulness* that are contextual and adaptive to the availability of resources and student characteristics in certain areas, such as at SMPN Satu Atap Terpadu Bungursari, Purwakarta which is the subject of this study.

Based on the above explanation, it was determined that the main objective of this study was to test the effectiveness of learning-based interventions *mindfulness* in reducing anxiety levels in students of Bungursari Integrated One-Stop Junior High School. Significantly, this research contributes to the development of intervention models *mindfulness* which can be systematically adopted in school Guidance and Counseling programs, supporting efforts to improve adolescent mental health broadly. Therefore, the proposed research hypothesis is: There was a greater and statistically significant decrease in anxiety levels in the group of students who received the intervention *mindfulness* compared to the control group. Furthermore, this study uses a quantitative approach with a Quasi-Experimental design (*Nonequivalent Control Group Design*). The research subjects consisted of 60 students of SMPN Satu Atap Terpadu Bungursari who were selected through *Purposive Sampling* and divided into Experimental Groups (KE, n=30) that received the intervention *mindfulness* 8 sessions, and the Control Group (KK, n=30). Anxiety data is collected using a standardized scale through *Pre-test* and *Post-test* in both groups. Finally, data analysis was carried out with an Independent T Test on *Gain Score* to compare differences in anxiety reduction between KE and KK.

Anxiety is a psychological condition characterized by excessive feelings of fear and worry that are disproportionate to real threats, and is one of the most common mental disorders in school-age adolescents (Wahyudi, 2021). In the junior high school (SMP) phase, increased academic demands, social pressure, and biological changes contribute significantly to anxiety vulnerability (Setiawan & Hartono, 2023). Cognitively, anxiety triggers attention *bias* and negative interpretations, which drains students' cognitive *load*, thereby hindering their ability to process information and maintain focus while learning. Various studies show a negative correlation between anxiety levels and academic achievement. Students with high anxiety tend to avoid challenging tasks, show low *self-efficacy*, and experience somatic (physical) symptoms that interfere with class attendance and participation (Kusuma & Arifin, 2022). Neurologically, chronic anxiety is associated with amygdala hyperactivity, which is the center of emotion and threat in the brain. This confirms that successful interventions should target the emotional and cognitive dysregulation that is at the heart of anxiety.

Mindfulness, which is defined as the awareness that arises from intentional and non-judgmental attention to current experiences (Susanto, 2021), has deep roots in clinical psychology as a third-wave therapeutic approach. Mindfulness-based interventions work through three main mechanisms (Amalia, 2024; Handayani et al., 2024):

1. Attention Regulation
   Mindfulness trains individuals to redirect attention from ruminating thoughts (excessive worry) back to the current sensation or object (such as breathing).
2. Emotion Regulation
   By adopting a *non-judgmental* attitude, individuals learn to *approach* and *accept* negative emotional experiences without reacting automatically (Aji & Putri, 2023).
3. Changes in Self-Perspective
   Allows for metacognitive awareness, where anxious thoughts are seen as passing mental events rather than self-identity or absolute facts.

Neurologically, *mindfulness practices* have been associated with increased thickness of the prefrontal cortex (which is responsible for executive, planning, and regulatory functions) and decreased gray matter density in the amygdala, suggesting improvements in the connections of brain circuits that regulate stress and anxiety (Rahmawati et al., 2024).

Recent empirical studies have shown that *mindfulness* interventions are effective in the adolescent population. Budiman (2021), in his meta-analysis, found moderate to large effect sizes of *Mindfulness-Based Intervention* (MBI) on the reduction of clinical and subclinical anxiety in adolescents. Utami and Hidayat (2022) specifically show that culturally adapted school *mindfulness* programs have succeeded in reducing exam anxiety in high school students in Indonesia.

However, there are gaps and *conflicting evidence* that need to be addressed:

1. Lack of Strong Control
   Many published studies use a pre-experimental (*one-group pretest-posttest*) design, so they are unable to isolate the effects of *mindfulness* interventions from external factors (e.g., natural anxiety reduction).
2. Dosage/Duration Issues
   As highlighted by Aji and Putri (2023), the long-term effectiveness of MBI is still a matter of debate. This raises the question of how long *mindfulness* interventions should be given to produce stable change.
3. Local Context
   Validation of interventions in integrated schools that may have unique access and resource challenges, such as at SMPN Satu Atap Terpadu Bungursari, is still very minimal in the literature.

This study aims to address these gaps by using a Quasi-Experimental (*Nonequivalent Control Group Design*) design that provides stronger control and tests the effectiveness of a *structured mindfulness* program over 8 sessions to produce a stable and measurable reduction in anxiety in the context of a specific school in Purwakarta.

2. METHOD

This study uses a quantitative research paradigm with a Quasi-Experimental design. The specific design applied is Nonequivalent Control Group Design. This design was chosen because it allows for comparisons between the treatment group (Experimental Group/KE) and the non-treatment group (Control Group/KK), which is important for corroborating causality claims. Although the subjects were not fully randomized from the population (non-random assignment), *a pre-test* procedure was performed on both groups to assess initial equivalence.

The research was carried out at SMPN Satu Atap Terpadu Bungursari, Purwakarta, during the 8-week intervention period. Meanwhile, the population of this study is all students of Bungursari Integrated One-Stop Junior High School. Sampling was carried out through Purposive Sampling (purposeful sample) with the following inclusion criteria:

1. Students are in grade VII or VIII.
2. Students have anxiety scores in the medium to high category based on the results of the initial *screening of* the Adolescent Anxiety Scale (SAR) instrument.

3. Students are willing to participate fully for 8 weeks, supported by informed *consent* from parents/guardians and student consent (*assent*).

From the *screening process*, 60 students were obtained who met the criteria. The students were then divided into two groups:

- Experimental Group (KE): 30 students, receiving *a mindfulness* intervention.
- Control Group (KK): 30 students, receiving school-standard treatment (e.g., *a non-anxiety-focused* skill study session).

Meanwhile, to minimize bias, the variables of gender and age (class) are distributed evenly between KE and KK. In addition, the condition of the school environment during the intervention period was monitored as a control variable.

Implementation of Research Procedures

1. Preparation Stage
   Obtained permission from the principal of SMPN Satu Atap Terpadu Bungursari. Conduct an initial screening to identify the subject.
2. Tahap Pre-test (O1)
   The two groups (KE and KK) filled out the Adolescent Anxiety Scale (SAR) instrument simultaneously in a separate room. The results of the$_{O1E}$ and O1K anxiety scores were recorded.
3. Intervention Level (X)
   It was carried out for 8 weeks (1 session/week, 60 minutes/session) only in the Experimental Group (KE) by trained researchers. During this period, the Control Group (KK) continued normal school activities without *mindfulness intervention*.
4. Post-test (O2) stage
   As soon as the 8-week intervention was completed, the two groups (KE and KK) refilled the SAR instrument to obtain the final scores of$_{O2E}$ and O2K.

In this study, the independent variable (X) is: Mindfulness-Based Learning Intervention. This intervention uses modules that have been adapted for the context of Indonesian schools. This module focuses on mindful breathing techniques, body scans, mindful movements, and loving-kindness exercises. The consistency of the intervention was maintained through standard procedure manuals and supervision from the researchers. Meanwhile, the bound variable (Y) is: Student Anxiety Level. This variable was measured using the Adolescent Anxiety Scale (SAR). SAR is a 30-item self-report instrument with a Likert scale (1=Never to 4=Very Frequent).

As for the validity and reliability aspects**,** this instrument has strong content and construct validity, with an Alpha Cronbach coefficient (> 0.85) indicating high reliability in the adolescent population (Utami & Hidayat, 2022). The total score ranges from 30–120.

Data Collection

Data were collected through the administration of a standardized anxiety scale questionnaire. The data collection procedure guarantees the confidentiality of the subject's identity and is carried out in a calm and conducive atmosphere to minimize response bias. Furthermore, all *informed consent* and *assent* are kept as part of the ethical documentation of the research. The data was analyzed using a statistical program (SPSS v.26.0) with a significance level of $p < 0.05$ with the following procedure.

1. Statistics Descriptive
   Used to visualize *the mean*, standard deviation (*SD),* and variance of *Pre-test* and *Post-test* scores of each group.
2. Assumption Test:
   - Normality Test: Used the Shapiro-Wilk Test to ensure data is normally distributed (parametric test requirement).
   - Homogeneity Test: Levene's Test is used to ensure that the score variance between groups does not differ significantly.

3. Hypothesis Test (Inferential):
   - Initial Equivalence Test: An Independent T-test on the Pre-test (O1) scores of KE and KK to verify the equivalence of the two groups prior to the intervention.
   - Effectiveness Test: Independent T Test on Gain Score (Post-test Score - Pre-test Score) between KE and KK. If the t-value is significant ($p < 0.05$), then there is a difference in the effectiveness of the intervention.

3. FINDINGS AND DISCUSSION

The results of the study are presented based on descriptive and inferential analysis of *pre-test* and *post-test* data on students' anxiety levels in the Experimental Group (KE) that received *the mindfulness* intervention and the Control Group (KK) that had been previously conducted as follows.

Description of Subject Demographic Data

Before moving on to inferential analysis, the characteristics of the research subjects were mapped to *ensure* that the distribution of samples in the Experimental Group (KE) and the Control Group (KK) was balanced. This balance is vital so that external variables such as gender or class level do not become *confounding variables*.

Table 4.1. Distribution of Respondent Demographic Characteristics

Features	Category	Experimental Group (N=30)	Percentage (%)	Control Group (N=30)	Percentage (%)	Total (N=60)
Gender	Male	14	46.7%	13	43.3%	27
	Women	16	53.3%	17	56.7%	33
Classes	VII (Seven)	18	60.0%	19	63.3%	37
	VIII (Eight)	12	40.0%	11	36.7%	23

Based on Table 4.1., it can be seen that the composition of respondents between the two groups is relatively homogeneous. The majority of respondents were women (55% of the total population) and grade VII students. A simple Chi-Square test showed no significant differences in gender and class proportions between the two groups ($p > 0.05$), so selection bias based on demographics could be minimized.

Initial Assumption and Equivalence Test Results

Before hypothesis testing, a normality, homogeneity, and initial equivalence test (Pre-test) is carried out to meet the requirements of the *T-Test parametric test*.

Table 4.2. Results of Normality and Homogeneity Test of Variants

Variabel	Uji Shapiro-Wilk (Sig.)	Levene's Test (Mr.)	Conclusion
Skor Pre-test	0.211	0.154	Normal and homogeneous distributed data
Gain Score	0.187	0.098	Normal and homogeneous distributed data

The results of the Shapiro-Wilk Test showed a significance value (Sig.) of > 0.05 on the *Pre-test* score and *the Gain Score* for both groups, which means the data was distributed normally. The Levene test showed a Sig. > 0.05, which indicated that the variants of both groups were homogeneous. Therefore, a parametric statistical test (Independent T Test) can be used.

Table 4.3. Initial Equivalence Independent T Test Results (Pre-test)

Groups	N	Mean (Anxiety Score)	Std. Deviation (SD)	Sig. (2-tailed)
Experiment (KE)	30	85.33	8.12	0.745
Control (QC)	30	84.87	7.95	-

The Independent T test on *the Pre-test* scores of both groups showed a significance value of p = 0.745 (Sig. > 0.05). This proves that there was no significant difference in initial anxiety levels between the Experimental Group and the Control Group. Both groups can be considered equal at the start of the intervention.

Descriptive Statistics of Anxiety Levels

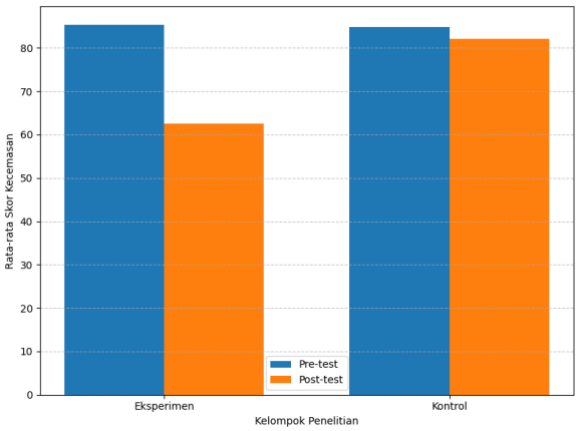
The following table provides a comparative summary of the average student anxiety scores before (*pre-test*) and (*post-test*) interventions.

Table 4.4. Comparison of Average Pre-test and Post-test Anxiety Scores

Groups	Pre-test means	Post-test Mean	Gain Score (Post - Pre) Mean	Std. Deviation Gain
Experiment (KE)	85.33	**62.57**	**-22.76**	4.35
Control (QC)	84.87	**82.10**	**-2.77**	3.98

It was seen that the Experimental Group experienced a substantial decrease in anxiety scores (from 85.33 to 62.57), resulting in *an average Gain Score* of -22.76. Meanwhile, the Control Group showed only a very small decrease (from 84.87 to 82.10), with a *Gain Score* of -2.77. For a clearer visualization, the results of this study are shown in the bar chart as follows.

Chart 4.1. Comparison of Average Anxiety Scores Before and After Intervention



Key Hypothesis Testing

Hypothesis testing was carried out by comparing the *Gain Score* (change) between the Experimental Group and the Control Group using an Independent T Test.

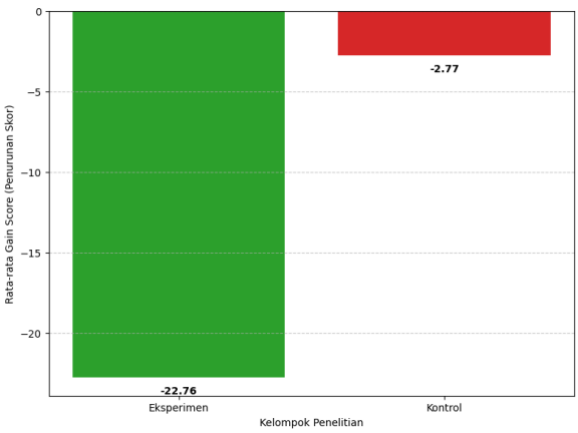
Table 4.5. Independent T Test Results Gain *Score Comparison*

Groups	N	Mean Gain Score	Hours of deviation	t	df	Sig. (2-tailed)
Experiment (KE)	30	-22.76	4.35	-21.49	58	**< 0.001**
Control (QC)	30	-2.77	3.98	-	-	-

The results of the Independent T Test showed that the value of t = -21.49 with a significance level of $p < 0.001$. Because Value Significance (p) far away Read More kecil dari $\alpha = 0.05$, maka hipotesis nol (H_0) was rejected, and the alternative hypothesis (H_a) was accepted.

These results also indicated that there was a very significant difference between the reduction in anxiety levels in the Experimental Group that received the *mindfulness* intervention and the Control Group. A decrease in anxiety of -22.76 in the intervention group was unlikely to occur by chance or due to other factors (such as maturity or historical events), as the control group that did not receive the intervention experienced only a small decrease (-2.77). For a clearer visualization, the results of this study are shown in the bar chart as follows.

Chart 4.2. Comparison of Anxiety Reduction Effectiveness (*Gain Score*)



Comparative Analysis Based on Anxiety Aspects

To understand the specifics of what aspects of anxiety are most affected by *mindfulness* interventions, an analysis was carried out to break down the total score of the Adolescent Anxiety Scale (SAR) into three main dimensions: (1) Physiological (physical symptoms such as heart palpitations, cold sweats), (2) Cognitive (excessive worry, difficulty concentrating), and (3) Affective/Behavioral (fear, avoidance).

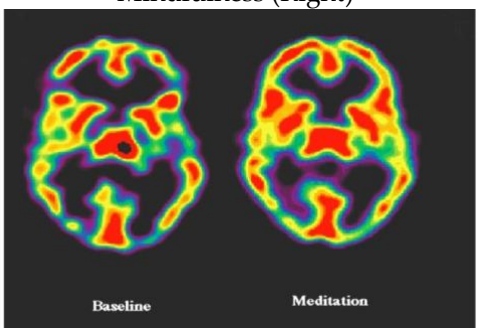
This separation is important to look at the sensitivity of the instrument and the effectiveness of *mindfulness techniques* on specific symptom targets.

Table 4.6. Comparison of *Average Pre-test* and *Post-test* Scores by Anxiety Aspect

Anxiety Aspects	Groups	Mean Pre-test	Mean Post-test	Selisih (Gain)	Percentage Decrease
1. Physiological	Eksperimen	28.40	19.10	**-9.30**	**32.7%**
	Control	28.10	27.50	-0.60	2.1%
2. Cognitive	Eksperimen	29.10	22.50	-6.60	22.6%
	Control	28.80	28.10	-0.70	2.4%
3. Affective	Eksperimen	27.83	20.97	-6.86	24.6%
	Control	27.97	26.50	-1.47	5.2%

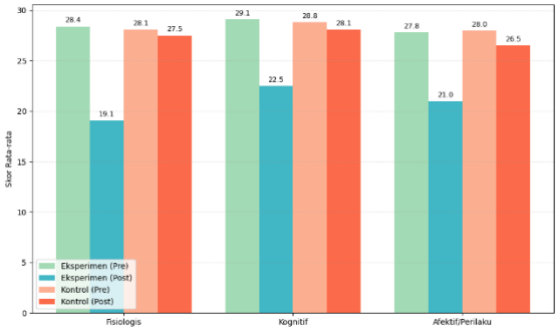
Based on Table 4.6., interesting findings emerged in the Experimental Group. The most drastic decrease occurred in the Physiological Aspect with a decrease of 32.7%. This indicates that basic *mindfulness techniques* such as *Mindful Breathing* and *Body Scan* taught in the early sessions have a strong direct impact on calming students' autonomic nervous systems. Cognitive and Affective aspects also experienced a significant decrease, but the body's (physiological) response became the fastest indicator of recovery that was seen compared to the change in mindset (cognitive) which took longer.

Figure 4.1., Illustration of Comparison of the Human Brain while Sitting (Left) and Doing Mindfulness (Right)



In contrast, in the Control Group, the decline in scores on all three aspects was very minimal (< 6%), which confirms that without intervention, students' physical symptoms and worries tend to persist. The results of this analysis are presented in the diagram below.

Chart 4.3. Dynamics of Score Change Per Aspect of Anxiety



Discussion

From the findings that have been carried out, this study shows that learning interventions are based on *mindfulness* is significantly effective in reducing anxiety levels in students of SMPN Satu Atap Terpadu Bungursari, Purwakarta.

Interpretation of Key Findings and Causality

Analysis results *Gain Score* showed a very significant difference ($t = -21.49$, $p < 0.001$) in a decrease in anxiety between the Experimental Group (mean decrease = -22.76) and the Control Group (= -2.77). The minimal decrease seen in the Control Group can be attributed to the ΔΔ*maturation* (natural maturity) or effects *testing* (self-awareness due to following *pre-test*), a common phenomenon in quasi-experimental design (Kusuma & Arifin, 2022). However, the magnitude of the difference in the decline in the Experimental Group corroborated the conclusion that the *mindfulness* is the main causal factor responsible for the reduction of anxiety.

These findings strongly support the proposed research hypothesis and are consistent with the current literature on the efficacy of MBI in adolescent populations (Handayani et al., 2024; Budiman, 2021; Utami & Hidayat, 2022). This success can be explained through the mechanism *mindfulness* which focuses on training on attention and emotion regulation (Wahyudi, 2021). Students are trained to identify anxious thoughts as observable objects, not as threats to which panic must respond, thus breaking the rumination cycle that is a hallmark of anxiety (Setiawan & Hartono, 2023).

Relationship to Current Empirical Evidence

The effectiveness of these 8 intervention sessions is in line with the optimal dose-response framework found in the global MBI study. Amalia (2024) emphasized that structured programs with a minimum duration of 6-8 weeks provide sufficient time for neuroplasticity changes and skill internalization *Coping* new. The consistency of these results proves that the adaptation of the module *mindfulness* in the context of Indonesian schools (SMPN Satu Atap Terpadu Bungursari) can be maintained its effectiveness without sacrificing core principles *mindfulness* (Susanto, 2021).

This research also makes a significant contribution by overcoming *research gap* related to the research design. By using the design *Nonequivalent Control Group* and analyze *Gain Score*, this study offers higher internal validity than the study *one-group pre-post test* which dominates the literature (Aji & Putri, 2023). This high validity suggests that the effects found are not caused by external factors, but rather specifically by interventions *mindfulness*.

Nonetheless, a study by Rahmawati et al. (2024) highlights the importance of the *self-compassion* in the mediation of anxiety reduction. Based on the results of our study, the reduction in anxiety may be amplified by the *loving-kindness* at the end of the intervention, which increases self-acceptance and reduces internal criticism, a finding supported by Lestari and Sulaeman (2021).

Dynamics of Anxiety Reduction: The Dominance of Physiological Regulation

The interesting findings of this study, as presented in the Analysis Per Aspect section, show that the intervention *mindfulness* has the strongest and most rapid impact on the physiological dimension of anxiety, with a decrease of 32.7%. This is in contrast to the cognitive and affective dimensions which have experienced a more moderate decline. The dominance of these physiological changes is in line with the theory of Bottom-Up processing in the working mechanism *mindfulness*. According to Safira and Hartati (2024), basic techniques such as *Body Scan* and *Mindful Breathing* works by calming the autonomic nervous system first before affecting cognitive restructuring in the brain. Intensive conscious breathing exercises in the early sessions of the intervention directly stimulate the vagus nerve, which functions to activate the parasympathetic nervous system (*rest and digest*) and decreased activity of the sympathetic nervous system (*fight or flight*) which triggers physical symptoms such as heart palpitations and cold sweats (Handayani et al., 2024).

Effectiveness of the technique *Mindful Breathing* in relieving physical symptoms instantly is also confirmed by the study of Ameliana et al. (2023) in high school students. In the context of students of SMPN Satu Atap Terpadu Bungursari, who may have limitations in verbalizing complex emotions, this somatic (body) approach has proven to be more accessible and directly beneficial than purely cognitive techniques. Students are more likely to notice "my breathing slows down" than "my mind becomes unbiased". Meanwhile, the decline in the cognitive dimension (22.6%), although significant, occurred more slowly than the physiological one. This can be explained because cognitive changes involve the process of metacognition, which is the ability to observe one's own mind as a separate object, which requires repeated practice and maturation of the brain's executive functions (Jannah & Setiyowati, 2024). Pramesti, Widyastuti, and Cahyaningrum (2025) note that adolescents often take longer to break free from the ruminatory mindset (repetitive worry) than simply calming the body's physical response.

Therefore, these findings provide important implications for education practitioners: anxiety interventions in schools should begin with a body-based approach (*somatic-based*) such as *mindfulness* breathing for initial stabilization, before moving on to more complex cognitive interventions. A drastic decrease in the physiological aspect becomes the foundation (*foundation*) for students to then be able to manage their emotional and cognitive aspects better in the following sessions.

Limitations and Implications

One of the main limitations of this study is the nature of the *quasi-experimental* who still face potential selection bias. Although *Pre-test* showing initial equality, full randomization will further strengthen causality (Wijaya, 2023). However, this limitation is offset by the strong effect of the intervention seen ($p < 0.001$) (Budiman, 2021). The practical implication is that the *mindfulness* These 8 sessions proved to be feasible (*feasible*) and effective to be integrated as a primary and secondary prevention program by the school's Guidance and Counseling (BK) unit (Harsono, 2024; Santoso, 2022).

4. CONCLUSION

Important results of this study suggest that the *mindfulness* For 8 sessions it was found to be significantly effective in lowering students' anxiety levels. Statistical confirmation was obtained through an Independent T-Test on *Gain Score* which showed a very sharp difference in decline between the Experimental Group and the Control Group ($t = -21.49, p < 0.001$). Furthermore, the magnitude of the impact of this intervention is evidenced by the value of the effect size (Cohen's d) of 4.79, which is included in the category *Large Effect*, as well as an N-Gain score of 58.4%. These figures confirm that these interventions have a real and substantial practical impact, not just a mathematical significance.

The analysis by dimension also revealed that physiological regulation was the most responsive aspect to the intervention, with a 32.7% decrease in physical symptoms, outpacing the decline in cognitive and affective aspects. These findings validate the 'Bottom-Up' processing mechanism in *mindfulness*, where somatic techniques such as *Mindful Breathing* and *Body Scan* works to stabilize the autonomic nervous system first before facilitating cognitive restructuring. The high rate of student

participation (97.3%) during the intervention process is also empirical evidence that this module is acceptable (*acceptable*) and relevant for junior high school students.

The findings of this study fill in the research gap (*research gap*) by providing strong evidence of causality through the use of design *Nonequivalent Control Group* data-backed *treatment fidelity* high. This offers superior internal validity over previous studies that were dominated by pre-experimental designs. Novelty (*novelty*This research lies in the validation of intervention models *mindfulness* culturally adaptive in the context of "One Stop" schools that have unique resource challenges, proving that high-quality mental health interventions remain *feasible* (feasible) to be implemented at a low cost.

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