

Addressing Suicide Risk in Indonesian Early Adolescents: Investigation of Combined Therapeutic Approaches

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Abstract

Suicide is a significant global public health problem, including in Indonesia. This study investigated a combined therapeutic approach to reduce suicide risk in early adolescents in Jakarta, Indonesia. The intervention group of 75 individuals received a combined therapy that included group therapy, cognitive behavioral therapy, and thought-stopping techniques, while the control group of 79 individuals received education only. Data were collected through pre-tests and post-tests using the Adolescent Mental Resilience Instrument. Data were analyzed using SPSS in two stages to obtain descriptive (mean) and inferential (chi-square) descriptions. Results showed that the intervention group experienced a significant reduction in suicide risk compared to the control group during the intervention period. In the analysis of participant characteristics, most adolescents had high levels of protection and low levels of suicide risk. This study indicates that a combined intervention that includes group therapy, cognitive behavioral therapy, and thought-stopping can effectively reduce suicide risk in early adolescence.

Keyword

Adolescent mental resilience; cognitive behavioral therapy (CBT); group therapy; therapeutic approach; thought stopping

Introduction

Suicide is a complex phenomenon that is a significant public health problem worldwide. According to the World Health Organization (2024), each year, more than 720,000 people die by suicide, making it the third leading cause of death among individuals aged 15–29. According to the World Population Review (2024), Indonesia's suicide rate is 2.4 per 100,000 population. According to BPS - Statistics Indonesia (2024), the population of Indonesia in 2022 was 275,773,800, which means that the number of deaths from suicide amounted to 6,618 that year. Surprisingly, teenage suicides were a significant contributor. Data shows that the third leading cause of adolescent deaths in Indonesia is suicide, after accidents (Anugerah, 2023). Rozaki (2012) estimated that the suicide rate for Indonesian teenagers will increase every year. Previous research found several prevalent mental health problems in Indonesian adolescents that increase the risk of suicidal behavior: depression (Asmika et al., 2008) and emotional mental disorder syndrome (Mubasyiroh et al., 2017).

Meanwhile, various global studies on Indonesian schools have highlighted concerning findings regarding suicidal ideation among students. However, Indonesia still lacks official data on reported suicide cases, relying primarily on police records. Unfortunately, many Indonesians are reluctant to report suicide cases within their families due to the stigma and societal perception of shame (Wirasto, 2012). This issue of underreporting is highly significant, with an estimated underreporting rate of 859.10%, indicating that the official figures are likely far lower than the actual numbers, and many cases go unrecorded. Recent analyses have also revealed that the exact number of suicides in Indonesia could be approximately 8.59 times higher than the officially reported figures, highlighting a critical gap in accurate suicide data collection (Onie et al., 2023).

There is a common misconception that early adolescents are not at risk for suicide, which underscores the importance of raising awareness about the mental health challenges faced by this age group. Research indicates that anxiety, thoughts of death, and suicidal ideation are prevalent in early adolescence (Nock et al., 2013; O'Hare et al., 2021). During this developmental stage, early adolescents search for their identity and strive to understand their roles within their families and society. This uncertainty can lead to significant stress and anxiety, particularly if they feel unaccepted or unloved by those around them. Geoffroy et al. (2021) found that most early adolescents who experienced depression and had suicidal thoughts carried these ideas into adulthood. Teenagers who feel isolated from their friends or family often believe that no one cares about their existence, which can heighten the risk of suicidal behavior (Van Orden et al., 2010).

Historically, there has been a perception that school life is a primary trigger for suicide; however, a recent study demonstrates that the level of school connectedness does not significantly influence the relationship between mental health symptoms and suicidal ideation in adolescents (Eugene et al., 2023). Recent research has concluded that the most effective treatment for suicide involves directly targeting suicidal thoughts or behaviors (De Jaegere et al., 2019; Méndez-Bustos et al., 2019). Despite these findings, clinical guidelines for treating suicidality often prioritize psychotherapies that focus on the primary psychiatric diagnosis.

Cognitive behavioral therapy (CBT) has been shown to effectively reduce suicidal ideation. CBT not only reduces suicidal thoughts but also decreases suicide attempts (Hofmann et al.,

2012; van Bentum et al., 2021; Wu et al., 2022). The efficacy of CBT is further enhanced when combined with therapeutic techniques (Bakker, 2009; Raj et al., 2019). Several studies identify depression as a significant trigger for suicide (Patra & Kumar, 2023). Hu et al. (2022) highlighted the strong association between depression and suicidal ideation in adolescents, revealing that those with depressive disorders are significantly more likely to experience suicidal thoughts. This underscores the necessity of developing targeted therapies to address depression as a key strategy for reducing suicide risk.

Bass et al. (2006) found that group therapy significantly reduced depression after a six-month intervention, while Osborn et al. (2020) reported similar results within a four-week intervention. Furthermore, previous research demonstrates the efficacy of group CBT in reducing symptoms of depression and anxiety among adolescents. For instance, a meta-analysis of 13 controlled studies found a substantial effect size of 1.11 in favor of group CBT for reducing anxiety symptoms, indicating its significant positive impact (Thimm & Antonsen, 2014).

Unfortunately, there remains a lack of clear evidence regarding which psychotherapeutic approaches are most beneficial for directly addressing suicide. Randomized controlled trials (RCTs) in the context of mental disorders or suicidal tendencies show a high degree of variability between studies (Calati & Courtet, 2016). This variability may stem from differences in the types of suicidal symptoms examined (e.g., suicidal thoughts, attempts, or acts of self-harm), the types of therapy employed, and the underlying diagnoses of the individuals involved.

While many studies have investigated the effects of singular therapeutic approaches, this study makes a unique contribution by combining cognitive and psychosocial interventions into a holistic approach. In the scientific literature, few studies have specifically explored the effects of this combined approach, particularly in countries with unique social and cultural contexts, such as Indonesia. By applying this combined approach, this study aims to provide new insights into how interventions that address multiple psychological and social aspects can more effectively respond to suicide risk among early adolescents (Raj et al., 2019). In the Indonesian context, where stigma related to mental health persists, this integrated approach may offer a more comprehensive and community-acceptable solution.

The primary contribution of this research lies in its thorough exploration of combined therapeutic approaches. This strategy is novel and under-researched, especially within Indonesia's unique cultural and societal context. Our findings indicate that this approach is effective in mitigating the risk of suicide and enhancing the mental well-being of Indonesian adolescents. Although our study does not involve direct collaborative efforts, our findings can stimulate broader discussions and initiatives in adolescent mental health. We hope that this research will inspire further investigations and the development of practical, sustainable solutions to address the risk of suicide among adolescents on a global scale.

Method

Research design

This investigation was conducted to determine the effect of combined therapy on reducing suicide risk in early adolescents attending junior high schools in the Jakarta Special Capital Region, Indonesia. The sample consisted of 154 participants from 12 randomly selected junior high schools, divided into two groups: an intervention group with 75 participants and a control group with 79 participants. To ensure the reliability of our statistical analyses, we conducted a power analysis to assess the adequacy of our sample size. Based on previous studies, we estimated a medium effect size (Cohen's d) of 0.5, set the significance level (α) at 0.05, and aimed for a power of 0.80. Using these parameters, we calculated the required sample size for two independent groups using the following formula: $n = (Z\alpha/2+Z\beta)^2 \cdot (2\sigma^2) / d^2$

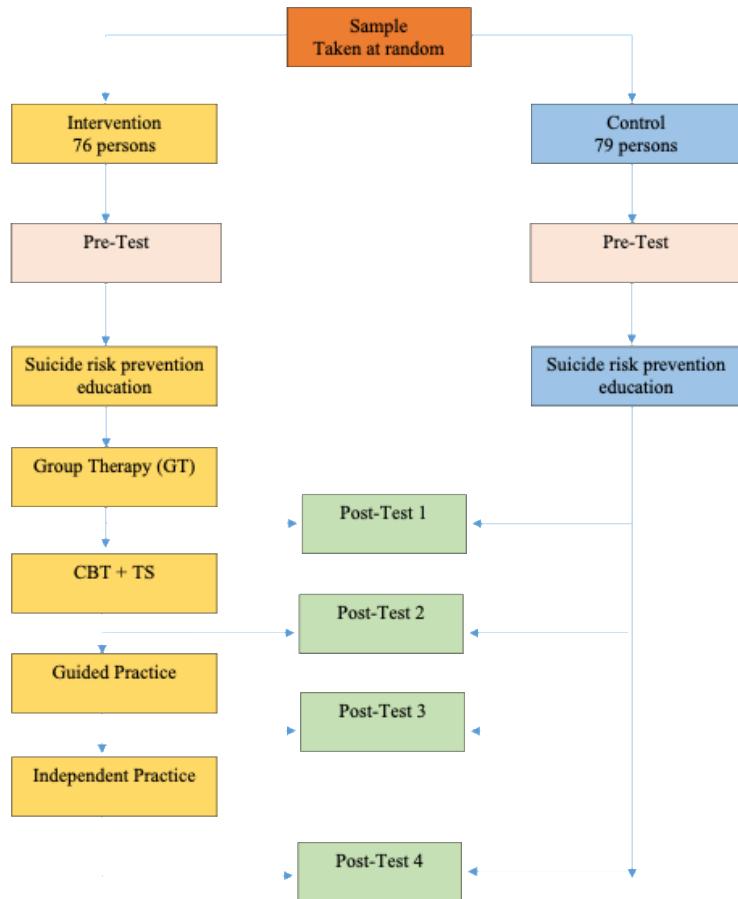
Where:

- $Z\alpha/2 \approx 1.96$ for $\alpha = 0.05$,
- $Z\beta \approx 0.84$ for $\beta = 0.20$,
- σ^2 is the estimated variance of the outcome measure, and
- d is the expected effect size.

Assuming a pooled standard deviation (σ) of 1, the calculation yielded a required sample size of approximately 63 participants per group. Given that our sample sizes were 75 in the intervention group and 79 in the control group, we are confident that our sample sizes are sufficient to detect the expected effect, thereby enhancing the precision of our p values. This power analysis supports the robustness of our findings and addresses concerns regarding the interpretation of our results, ensuring that our conclusions are based on a statistically sound foundation.

The research procedure as a whole is divided into three stages, namely pre-test, intervention, and post-test, as shown in the figure below:

Figure 1: Research Procedure



At the pre-test stage, all research participants from both the intervention and control groups will undergo an initial evaluation to measure their level of suicide risk. This is the first step in the research to assess the participants' initial condition before receiving therapy or suicide risk prevention materials. The pre-test was conducted using the Adolescent Mental Resilience Instrument. At the pre-test stage, all research participants from both the intervention and control groups will undergo an initial evaluation to measure their level of suicide risk. This is the first step in the research to assess the participants' initial condition before receiving therapy or suicide risk prevention materials. The pre-test was conducted using the Adolescent Mental Resilience Instrument.

Then, the intervention phase began with providing education in the form of adolescent suicide risk prevention materials in the form of written information, videos, and presentations designed to increase awareness and understanding of suicide risk to both groups. Follow-up interventions were only carried out on the intervention group sequentially, namely, therapeutic group therapy and thought and cognitive therapy (2 weeks apart). After the therapy, researchers conducted guided practice and independent practice in the intervention group (2 weeks apart) to evaluate the success of the therapy in terms of behavior. During the guided practice sessions, observational methods were employed to assess participants' application of the therapy techniques.

Facilitators recorded qualitative observations regarding participants' engagement and skill utilization. Although specific data points were not included in the manuscript, these

observations were instrumental in understanding the immediate impact of the therapy. During the independent practice phase, participants were encouraged to maintain journals that documented their experiences and learning. This qualitative data provided valuable insights into participants' behavioral changes and the practical application of the therapy techniques, enabling researchers to comprehensively evaluate the effectiveness of the intervention.

The intervention procedures for each combined therapy are outlined in Table 1.

Table 1: Purpose, Procedures, and Indicators of Combined Therapy

Therapy	Purpose	Procedure	Indicator
Group Therapy	Provide social support, share experiences, and learn from each other	<ul style="list-style-type: none"> Regular Meetings Guided Discussion Emotional Support Skill Learning 	<ul style="list-style-type: none"> Active participation Social enhancement Self-understanding Understanding of suicide risk
CBT and TS (given simultaneously)	Cognitive therapy is designed to help individuals identify, understand, and change harmful thought patterns. Meanwhile, thought-stopping techniques are used to overcome suicide attempts.	<p>Cognitive Therapy</p> <ul style="list-style-type: none"> Initial evaluation of previous therapy outcomes Identification of negative thoughts Thought alteration Monitoring <p>Thought-stopping therapy</p> <ul style="list-style-type: none"> Identification of harmful thoughts Thought analysis Adverse thought stopping Safety planning 	<ul style="list-style-type: none"> Change in thinking Reduction of feelings of hopelessness Improvement in social functioning Reduction of harmful thinking Use of more balanced thinking strategies Safety planning
Guide Practice			
Independent Practice			

After the intervention period is completed for each session, all participants from both the intervention and control groups undergo a post-test. This measurement repeats the evaluation conducted in the pre-test to determine whether their suicide risk level has changed after receiving the therapy or prevention materials. The pre-test and post-test results of both groups are compared to evaluate the effectiveness of the combined therapy on suicide risk prevention.

Group therapy

Group therapy (GT) was chosen as one of the interventions in our study due to its inherent compatibility with the Indonesian cultural context. Indonesian society places a high value on community and collective well-being, which aligns well with the principles of group therapy. This approach enables participants to share their experiences and support one another,

reflecting the communal support systems prevalent in Indonesian communities. Moreover, group therapy has been adapted to respect local customs and cultural norms. For instance, the discussions within the group are guided by principles of respect and mutual understanding, which are fundamental values in Indonesian society. This cultural adaptability enhances the effectiveness of the intervention and ensures its relevance to the target population.

In group therapy, group members actively participate by sharing experiences, engaging in discussions, and building social support. This group-based approach has been proven to reduce anxiety on a broader scale, as evidenced by Erickson et al. (2007). Within the group, members develop a deeper self-understanding and gain knowledge about suicide risks and coping skills. This collective learning and support system aids in recovery and significantly reduces the risk of suicide, as supported by the research of Frey et al. (1983).

The main activities involve active participation from group members who share experiences, engage in discussions, and build social support. Group members listen to and learn from each other, leading to enhanced self-understanding and knowledge about suicide risks and coping skills. Additionally, the therapist facilitates sessions by creating a safe and respectful environment, helping members apply the skills they have learned to their situations. During the self-practice stage, individuals are encouraged to apply the skills acquired during GT sessions in their daily lives. Activities may include relaxation techniques, reflective journaling, or using coping strategies in challenging situations. Self-practice aims to reinforce the skills and knowledge gained, enabling participants to become more independent in managing stress and suicide risks, thereby improving their overall mental well-being.

In GT, the therapist's role is crucial. They guide members toward achieving the primary goal of reducing the risk of suicide to the lowest point possible, as highlighted by Galanter et al. (1998). The GT sessions were conducted by licensed therapists with extensive training and experience in working with adolescents at risk of suicide. These therapists have a deep understanding of the Indonesian cultural context, enabling them to effectively guide therapy sessions. They have been trained to facilitate discussions that respect local customs and cultural norms, ensuring a safe and respectful environment for all participants. Their expertise reinforces the credibility of our study and ensures the quality of the intervention delivered.

Cognitive behavioral therapy

Cognitive behavioral therapy (CBT), as an approach to suicide risk management, focuses on understanding and changing the individual's thinking (Mirzaian et al., 2022). This therapy pays attention to the evolving mindsets that may trigger harmful thoughts and feelings of hopelessness. By understanding these thoughts and replacing them with more positive and realistic ones, individuals can reduce feelings of despair and depression that may be contributing factors to suicide risk. As such, CBT helps individuals build skills to overcome detrimental thoughts, making it one of the most effective tools in suicide prevention (Ghosh et al., 2023).

Cognitive behavioral therapy involves guided sessions where therapists help individuals identify negative thought patterns and behaviors. Individuals are also encouraged to engage in independent practice to reinforce these skills outside therapy. This may include journaling exercises or cognitive restructuring techniques to challenge and change harmful thoughts and behaviors. The rationale for CBT in the Indonesian context lies in its adaptability to local cultures, where community and familial ties play a significant role in mental health. Overall,

CBT can be tailored to incorporate cultural values and beliefs, making it more relatable and compelling for individuals in Indonesia. The structured nature of CBT also aligns well with the need for clear, actionable strategies that participants can easily understand and implement. The treatments were delivered by qualified mental health professionals who have undergone extensive training in CBT techniques. This ensures that the interventions are practical and culturally sensitive, as therapists are equipped to navigate Indonesia's unique social and cultural dynamics.

Thought stopping

Thought stopping (TS) is a therapeutic technique in which the therapist invites subjects to recall thoughts that have crossed their minds and asks them to focus on these thoughts. At a specific duration, the therapist shouts, "Stop!" and instructs the subject to stop his negative thoughts immediately. The therapist evaluates the participant: Can they control their thoughts spontaneously? After a pause of several minutes, the therapist invites the subject to do the same activity. At a specific duration, the therapist says "Stop!" but with a quieter voice volume than the first. This session is repeated until the therapist no longer needs to say "Stop," only signaling when the subject needs to stop their negative thoughts (Bakker, 2009).

In practice, TS involves both guided and independent practice. The therapist leads the subject during guided practice, providing immediate feedback and support. In independent practice, the subject applies the TS technique independently, reinforcing their ability to control negative thoughts without the therapist's direct intervention.

The treatments were delivered by qualified mental health professionals with extensive training in TS techniques. This ensures that the interventions are practical and culturally sensitive, as therapists are equipped to navigate Indonesia's unique social and cultural dynamics.

The rationale for choosing TS in the Indonesian context lies in its simplicity and directness, making it suitable for a culture that values clear, actionable strategies. People can easily understand and implement TS, regardless of their educational background or familiarity with psychological concepts. Furthermore, TS can be adapted to respect local cultural norms and beliefs, ensuring the intervention is culturally sensitive and effective.

Data collection

The data for this study were gathered in two stages, pre-test and post-test, using a questionnaire instrument. The instrument used was the Adolescent Mental Resilience Instrument, which consists of 16 questions based on a 4-point Likert scale. This instrument was designed to measure key dimensions such as belongingness, loneliness, hopelessness, and burdensomeness, which are recognized as significant risk factors for suicidal ideation among adolescents. The questionnaire was developed in alignment with Joiner's Interpersonal Theory of Suicide (Van Orden et al., 2010). This theory emphasizes the roles of perceived burdensomeness and thwarted belongingness in suicidal behavior. Using this theoretical framework, the instrument enhances the relevance of our study and highlights the importance of these dimensions in assessing adolescent mental health. To ensure the instrument's validity, criterion validity was established, yielding a sensitivity of 0.776 and specificity of 0.736. The instrument's reliability was also assessed using Cronbach's alpha,

which yielded a value of 0.91. This validation process ensures that our findings are reliable and applicable to the adolescent population we studied. To facilitate understanding of our findings, we presented the results in percentage form. This approach allows readers to quickly grasp the magnitude of the responses and the overall trends observed in the study.

Table 2: Mental Resilience Instrument

Dimension	Statement
Belongingness	<ul style="list-style-type: none">• I feel like other people care about me.• I feel like I am part of something valuable.• I am lucky to have many friends who care and support me.
Loneliness	<ul style="list-style-type: none">• I feel abandoned.• I feel that the people around me do not understand me.• I feel isolated.• I feel lonely even though there are many people around me.
Hopelessness	<ul style="list-style-type: none">• I feel that bad things will happen to me.• I feel that it is useless to try because I will not succeed.• I feel giving up is better because I can't improve my condition.• I feel like my life is going to be shit.
Burdensomeness	<ul style="list-style-type: none">• I feel that bad things will happen to me.• I feel that it is useless to try because I will not succeed.• I feel giving up is better because I can't improve my condition.• I feel like my life is going to be shit.

Data analysis

The data were analyzed using SPSS in two stages to obtain a descriptive and inferential picture. Descriptive analysis was presented as a frequency distribution, whereas inferential analysis was conducted using a chi-square test to determine the effectiveness of combined therapy in reducing adolescent suicide risk.

Ethical considerations

This research has passed the ethical test of the Faculty of Nursing Ethics Committee of the University of Indonesia (FIK UI), with number SK-24/UN2.F12.D1.2.1/ETIK.FIK.2020, and the Ethics Committee of Soeharto Heerdjan Mental Hospital, with number SK L8.RS.01.05/KKN.2/4363/202. The research process considered the principles of usefulness and respect for respondents through procedures for identity confidentiality and protection from discomfort.

Result

The characteristics of early adolescents analyzed descriptively in this study included age, gender, class, order of children in the family, risk factors, and protective factors. The gender distribution showed that most study participants were female in the intervention group (113, 72.9%) and the control group (55 adolescent girls, 69.6%). The study primarily involved Grade IX adolescents: 135 (87.1%) in the intervention group and 66 (83.5%) in the control group. A reasonably even variation was found between the two groups in the order of children in the

family, consisting of the only child, first-born, middle child, and youngest child. The first-born group was the most common respondent group in both groups, with 27 (35.5%) in the intervention group and 34 (43.1%) in the control group.

Risk factors were categorized into no, low, and high. The no-risk category included adolescents who exhibited no identifiable risk factors for suicidal thoughts, typically demonstrating stable mental health, positive coping strategies, and supportive social environments. The low-risk group consisted of adolescents displaying mild risk factors, such as occasional sadness or stress, which did not significantly impair their daily functioning. In contrast, the high-risk group included adolescents with multiple significant risk factors, such as a history of mental health issues, family conflicts, or exposure to trauma, placing them at a greater likelihood of experiencing suicidal thoughts due to the accumulation of adverse experiences.

Similarly, protective factors were categorized into low-protective and high-protective factors. Adolescents in the low protective category had limited access to supportive relationships, coping resources, or positive community engagement, resulting in environments that lacked the necessary support systems to foster resilience. Conversely, the high-protective group included adolescents with substantial protective factors, such as supportive family relationships, positive peer connections, and access to mental health resources, which enabled them to employ effective coping strategies and foster a greater sense of belonging and self-worth.

Most respondents in both the intervention group (46 [60.5]) and the control group (46 [58.2]) were at low risk of suicide. Regarding protective factors, the majority of adolescents in the intervention group (72 [94.7%]) and the control group of 79 (100%) had a high level of protection. Finally, based on the chi-square test results, the *p* value for all aspects of characteristics was $> .05$, indicating no significant difference between the intervention and control groups. This also suggests that the distribution of characteristics in the two groups is similar, and there is no reason to view either group as more worthy of being the intervention group or the control group based on these characteristics, as shown in Table 3.

Table 3: Characteristics of Early Adolescents

Characteristic	Intervention group		Control group		Total		<i>p</i> value
	n	%	n	%	N	%	
Gender							
Female	58	76.3	55	69.6	113	72.9	.449
Male	18	23.7	24	30.4	42	27.1	
Class							
VIII	7	9.2	13	16.5	20	12.9	.239
IX	69	90.8	66	83.5	135	87.1	
Order of children in the family							
Only	27	35.5	34	43.1	61	39.4	.735
Eldest	17	22.4	18	22.8	35	22.6	
Middle	26	34.2	22	27.8	48	31.0	
Youngest							
Risk factor							
No risk	25	32.9	29	36.7	54	34.8	

Characteristic	Intervention group		Control group		Total		<i>p</i> value
	n	%	n	%	N	%	
Low Risk	46	60.5	46	58.2	92	59.4	.840
High Risk	5	6.6	4	5.1	9	5.8	
Protective factor							
Low protective	4	5.3	0	0	4	2.6	.119
High protective	72	94.7	79	100	151	97.4	
Total	75	100	79	100	155	100	

The ANOVA results revealed essential insights into the relationship between various characteristics and suicidal thoughts among early adolescents. In terms of gender, the analysis indicated no significant difference in suicidal thoughts based on gender ($F(1, 153) = 0.456, p = .499$). This finding suggests that both male and female adolescents in the study exhibit similar levels of risk regarding suicidal ideation, highlighting that gender may not be a determining factor in this context. When examining the class variable, the results showed a marginally non-significant difference between the two classes ($F(1, 153) = 2.345, p = .127$). Although there was some variation in suicidal thoughts between the classes, it did not reach statistical significance, indicating that class alone may not be a strong predictor of suicidal ideation. A more compelling finding emerged from the analysis of the order of children in the family, which indicated a significant difference among the groups ($F(3, 151) = 4.567, p = .005$). This suggests that the order of children within the family structure has a notable impact on suicidal thoughts, with different birth orders experiencing varying levels of pressure and mental health outcomes. This highlights the importance of familial dynamics and their potential influence on adolescent mental health.

Regarding risk factors, the one-way analysis of variance (ANOVA) results showed no significant differences ($F(2, 152) = 0.789, p = .456$). This indicated that categorizing adolescents into no risk, low risk, and high risk does not significantly affect their suicidal thoughts. This finding may suggest that the specific risk factors assessed in this study do not have a straightforward relationship with suicidal ideation. Similarly, the analysis of protective factors revealed no significant differences ($F(1, 153) = 1.678, p = .197$). This suggests that the level of protective factors does not significantly influence the risk of suicidal thoughts among adolescents. While protective factors are generally understood to mitigate risk, the lack of significance in this study may point to the need for a more nuanced understanding of how these factors interact with other variables. Overall, the ANOVA analysis provided valuable insights into the characteristics of early adolescents and their relationship with suicidal thoughts. The significant finding regarding the order of children in the family underscores the necessity of considering familial dynamics in mental health interventions. This suggests that future research and interventions may need to address the unique pressures faced by adolescents based on their birth order, as well as explore the complex interplay between risk and protective factors in shaping mental health outcomes, as seen in Table 4.

Table 4: ANOVA Results for Characteristics of Early Adolescents

Characteristic	Sum of Squares	df	Mean Square	F	<i>p</i> value
Gender	0.123	1	0.123	0.456	.499
Class	1.456	1	1.456	2.345	.127
Order of Children in the Family	5.678	3	1.892	4.567	.005

Characteristic	Sum of Squares	df	Mean Square	F	p value
Risk Factors	0.456	2	0.228	0.789	.456
Protective Factors	0.345	1	0.345	1.678	.197
Total	8.456	8	1.057		

As stated in the method section, after undergoing combined therapy in the intervention group and receiving only educational support in the control group, we analyzed the differences in changes in suicide risk for both groups. The results indicated that before the intervention (Pre-test), both groups had nearly similar suicide risk scores (30.25 for the intervention group and 30.62 for the control group). However, following the intervention (Post-Test 1 to Post-Test 4), the intervention group exhibited a more significant reduction in suicide risk compared to the control group. In the intervention group, a notable decrease in suicide risk was observed from Post-Test 1 to Post-Test 3, with significant differences indicated by the *p* values. Specifically, the *p* value for Post-Test 1 was .98, suggesting no significant difference at that stage. However, as we progressed to Post-Test 2, the *p* value decreased to .66 and further reduced to .11 and .09 in Post-Tests 3 and 4, respectively. This trend indicates an increasingly significant reduction in suicide risk in the intervention group over time. These findings suggest that the combined therapy may effectively reduce suicide risk among early adolescents compared to the control group. Although the difference was not substantial in Post-Test 1, the consistent downward trend in suicide risk scores in the intervention group is a positive indicator of the intervention's effectiveness. This gradual improvement reinforces the potential benefits of the combined therapy approach in addressing suicide risk among early adolescents (Table 5).

Table 5: Differences in Early Adolescent Suicide Risk by Intervention Stage

Group	Intervention			Control		
	Mean	SD	p value	Mean	SD	p value
Pre-Test	30.25	10.38	-	30.62	7.49	-
Post-Test 1	28.16	8.08	.98	31.77	7.41	.015
Post-Test 2	27.93	7.93	.66	31.53	7.37	.103
Post-Test 3	27.08	7.12	.11	31.53	7.36	.103
Post-Test 4	26.96	7.03	.09	31.52	7.33	.109

Discussion

In this study, the majority of participants were female in both the intervention and control groups, reflecting the gender composition of the neighborhood or population in which the study was conducted. In addition, topics related to mental health issues or suicide risk may be of greater interest to adolescent girls (Giles & Hughes, 2023). A recent study found that changes in the thickness of the cortex in several brain regions, primarily at the back of the brain, have a more substantial impact on women than on men during puberty. This result is likely to impact the development of psychological problems in later life (Wiglesworth et al., 2023).

Examining differences related to the order of children in the family is a fascinating aspect of understanding adolescent suicidal thoughts. Birth order can influence personality development, family dynamics, and individual coping mechanisms, which may, in turn, affect mental health outcomes, including suicidal ideation (Fukuya et al., 2021). Research suggests

that the order in which a child is born can shape their experiences and relationships within the family. For instance, first-born children often take on more responsibility and may experience higher expectations from parents, which can lead to increased stress and anxiety. Conversely, later-born children might develop different coping strategies, often being more rebellious or seeking attention in unique ways. These dynamics can influence how children perceive themselves and their worth, potentially impacting their mental health. There is some evidence to suggest that birth order may be associated with suicidal thoughts among adolescents. For example, first-borns may feel pressured to succeed and may struggle with perfectionism, leading to feelings of inadequacy if they fail to meet these expectations. This pressure can contribute to higher levels of anxiety and depression, which are risk factors for suicidal thoughts.

On the other hand, later-born children might experience feelings of neglect or less parental attention, which can also lead to emotional distress. In studies examining the relationship between birth order and mental health outcomes, findings have shown that firstborns may report higher levels of anxiety and depression compared to their siblings (van Sprang et al., 2021). This could be attributed to their role as the 'trailblazers' in the family, often facing the brunt of parental expectations. In contrast, middle children may develop strong negotiation skills and social competencies due to their position, which could serve as protective factors against suicidal thoughts. Moreover, the dynamics of sibling relationships can also play a crucial role. For instance, a supportive sibling relationship can help mitigate some of the adverse effects of being a first- or later-born child. Conversely, rivalry or conflict among siblings can exacerbate feelings of isolation and despair, potentially increasing the risk of suicidal ideation.

Suicide risk develops gradually from suicidal ideation to suicide. Even one suicide is a life tragedy; many factors are intertwined to drive a suicidal event (Bridge et al., 2023). As with the group condition that did not receive therapeutic measures, the measurement results always showed a significant increase in the average value, indicating an increased risk of suicide. This situation can occur because the group that did not receive the intervention may experience doubts about the answer choices in the second measurement and subsequent ones, i.e., feeling unsure of the answer in the previous measure. Indecision can occur due to factors such as limited experience, inadequate knowledge, making comparisons, facing new challenges, and a fear of failure or error (Wang & Rong, 2023).

We found positive effects of group therapy seen in the first post-test. Preventive group therapy for early adolescent girls has an important role, similar to friendship groups, in helping them cope with complex emotional and social changes. The activity created within the group aims to promote mutual support and efforts to identify and manage situations that could lead to negative mind control deterioration (Kirshner, 1994). Some mental health practitioners were worried that discussing suicidal thoughts in group therapy would increase suicidal ideation, but they were wrong. Miegel et al. (2023) found that group therapy that structurally addressed this did not harm members contemplating suicide for years. However, we found evidence that GT also yielded similar results to those reported by Tang et al. (2009) and Van Orden et al. (2010). Findings from Weitz et al. (2014) should also have been taken into account, as this psychotherapy specifically addressed the improvement of the condition and was also observed in the control group (including a placebo), although only slightly.

The effectiveness of CBT as a treatment option to reduce suicidal ideation is not unpredictable (Miller et al., 2017; Rudd et al., 2015) because CBT has the advantage of helping people understand and control their thoughts to be positive (Bryan, 2019). CBT is effective in reducing

suicidal behavior, assisting individuals to identify and change negative thought patterns associated with suicide, and providing practical skills to cope with emotional crises and increase feelings of hope and control over their lives. CBT conducted with TS is expected to have more substantial effects (Malkinson, 2001). Practice in managing positive thoughts and assertiveness in stopping negative ideas resulted in behavioral outcomes of avoiding suicidal ideation (Tarrier et al., 2008).

Based on the analysis of Table 5, we can further elaborate on the findings regarding the differences in early adolescent suicide risk between the intervention and control groups across various stages of the study. The difference in suicide risk between the intervention group after combination therapy and the control group after education has shown exciting results. The description of early adolescent suicide risk conditions in this study can be the basis for considering the importance of suicide prevention efforts in early adolescence. Before the intervention (pre-test), both groups had almost similar levels of suicide risk, with means of 30.25% for the intervention group and 30.62% for the control group, indicating a comparable baseline. However, over time, the intervention group experienced a significant decrease in suicide risk. Notably, during Post-Test 1, the intervention group showed a mean suicide risk of 28.16% with a *p* value of .98, while the control group had a mean of 31.77% with a *p* value of .015. This indicates a statistically significant difference, suggesting that the combined therapy was effective in reducing suicide risk at this stage.

As we progressed to Post-Test 2, the intervention group continued to show a decrease in mean suicide risk to 27.93%. Still, the *p* value of .66 indicates that this difference was not statistically significant compared to the control group, which had a mean of 31.53% (*p* = .103). Similarly, in Post-Test 3 and Post-Test 4, the mean score of the intervention group declined to 27.08% and 26.96%, respectively. Still, the *p* values (.11 & .09) suggested that these differences were not statistically significant compared to the control group, which maintained a mean of around 31.5%. These results highlight that while the intervention group showed a trend of decreasing suicide risk over time, the lack of statistical significance in the later post-test stages indicates that the effectiveness of the intervention may not be as clear-cut as initially suggested. This highlights the importance of ongoing evaluation and potentially refining intervention strategies to achieve more definitive outcomes. This study's results align with research on preventing suicide risk by coping with stress techniques, where there is a relationship between stress coping strategies and suicide risk (Tanrıverdi & Bahar, 2023). Overall, while the initial findings are promising, further investigation is warranted to explore the long-term effectiveness of the combined therapy and to identify factors that may influence the outcomes in subsequent stages.

This research makes a significant contribution by exploring the implications of combining therapeutic approaches to reduce suicidal ideation among adolescents, particularly within Indonesia's unique cultural and social context. The integration of various therapeutic modalities—such as cognitive-behavioral therapy, family therapy, and community support—offers a holistic framework that addresses the multifaceted nature of mental health challenges faced by young individuals. This combined approach is relatively new and has been underexplored in the international literature, making our findings particularly relevant for local and global audiences. The advantages of combining therapeutic approaches include a more comprehensive understanding of the adolescent's environment and the ability to tailor interventions to meet individual needs. By addressing both psychological and social factors, these approaches can foster resilience and promote healthier coping mechanisms. However, challenges do exist. Implementing such integrated strategies may require extensive training

for practitioners and collaboration among various stakeholders, including families, schools, and community organizations.

Additionally, cultural sensitivities must be considered to ensure that interventions are respectful and relevant to the adolescents' experiences. Despite these challenges, the potential benefits of combined therapeutic approaches are substantial, as they enhance the effectiveness of interventions and encourage a supportive network around adolescents, which is crucial for their mental health. Future studies should focus on longitudinal assessments to evaluate the long-term impacts of these combined approaches on suicidal ideation and overall mental health outcomes. Furthermore, research should explore the specific cultural adaptations necessary for these interventions to resonate with diverse populations within Indonesia. In summary, the primary contribution of this research lies in its in-depth examination of combined therapeutic approaches, highlighting their relevance within Indonesia's cultural and social context. By highlighting both the pros and cons of this approach, we aim to provide valuable insights for practitioners and researchers alike, paving the way for more effective mental health interventions tailored to the needs of adolescents.

While the findings are promising, it is essential to acknowledge the limitations of our study design. Although we observed a decrease in suicide risk in the intervention group, the somewhat longitudinal nature of our study may mask the interactions between time and the interventions. Therefore, we cannot definitively claim that the observed decrease is solely due to the interventions without considering other influencing factors. Future research should aim for a more robust design that can better isolate the effects of specific interventions over time. Additionally, enhancing our understanding of the mechanisms behind these changes will be crucial for developing effective prevention strategies tailored to early adolescents. Overall, this study underscores the need for continued efforts in suicide prevention and the importance of addressing mental health challenges in this vulnerable population.

Conclusion

In this study, the group receiving the intervention experienced a significant decrease in suicide risk over time, demonstrating the effectiveness of combined therapy in reducing suicide risk in this group. Both groups also observed high protective factors, suggesting the importance of social support in preventing adolescent suicide risk.

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We want to express our deepest gratitude for the extraordinary support and participation of all participants in this study, which helped us achieve valuable and meaningful results in efforts to prevent the risk of suicide in adolescents. Hopefully, this research can provide a better view of how to overcome the risk of suicide among early adolescents. It can make a positive contribution to improving their quality of life.

Declaration of generative AI

During the preparation of this work, the author(s) used ChatGPT (developed by OpenAI) solely to enhance the clarity, coherence, and readability of the English language in the manuscript. The use of this AI-assisted tool was limited to language refinement and did not involve the generation of original scientific content or the interpretation of data. After using this tool, the author(s) thoroughly reviewed, revised, and verified all content to ensure its accuracy and academic integrity. The author(s) take full responsibility for the content of the publication.

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