

## Research Article

# Psychological Intervention for Pre-Suicidal Attitudes in Youth

Aliya Mambetalina<sup>1</sup>, Zhanar Kereimaganbetova<sup>2</sup>, Gulnaz Ganiyeva<sup>1</sup>, Gulpara Zhukenova<sup>3</sup>,  
Bibianar Baizhumanova<sup>1</sup>, Ainura Sissenova<sup>1\*</sup>

<sup>1</sup>Department of Psychology, Faculty of Social Sciences, L.N. Gumilyov Eurasian National University, Astana 010000, Kazakhstan

<sup>2</sup>Department of Special Pedagogy and Psychology, Faculty of Pedagogy and Management in Education, K. Zhubanov Aktobe Regional University, Astana 010000, Kazakhstan

<sup>3</sup>Department of Pedagogy, Graduate School of Education, L.N. Gumilyov Eurasian National University, Astana 010000, Kazakhstan

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### Background

Suicide cases among youth, unfortunately, are common, highlighting the need for psychological interventions as preventive measures.

### Objective

The primary objective of this study is to identify the factors contributing to the development of pre-suicidal attitudes among youth in Kazakhstan.

### Methods

This study evaluated the effectiveness of cognitive behavioral therapy for suicide prevention (CBT-SP) and provided recommendations for its improvement. A total of 753 first- to third-year university students in Kazakhstan participated in the study. Among them, 165 (21.91%) reported suicidal ideation ranging from mild to severe, and 71 of these respondents took part in the CBT-SP intervention. The Beck Scale for Suicidal Ideation served as the primary assessment tool.

### Results

Several key factors significantly influencing the development of pre-suicidal attitudes were identified. The strongest predictors included experiences of bullying ( $\beta = 0.421$ ,  $p=0.0001$ ), exposure to traumatic events ( $\beta = 0.397$ ,  $p=0.0008$ ), and low social support ( $\beta = 0.386$ ,  $p=0.0005$ ). Analysis of pre- and post-test data revealed a significant reduction in suicidal ideation following CBT-SP, with the most substantial decrease observed among participants with severe suicidal ideation (a reduction of 7.53 points,  $p=0.000$ ).

### Conclusion

Interviews with intervention participants offer valuable insights that inform recommendations for improving the effectiveness of CBT-SP. These findings hold both scientific and practical significance, providing guidance for developing and enhancing suicide prevention strategies at the institutional level.

## 1. INTRODUCTION

Global statistics on the increasing prevalence of suicidal behavior among youth over the past decades indicate alarming trends. Between 1990 and 2020, suicide rates among individuals aged 10 – 24 have generally increased across various regions. For instance, in the United Kingdom, suicide rates among men have risen by 2.5% annually since 2005, whereas among women, the increase has been 8.5%/

year since 2012. Similarly, in the United States, suicide rates among men increased by 3.8% annually from 2009 to 2020. In contrast, among women, the increase was 6.7%/year from 2007 to 2017.<sup>1</sup> Given these concerning trends, researchers face the critical challenge of developing effective strategies to support vulnerable youth populations.<sup>2,3</sup>

According to the World Health Organization, suicide is a significant cause of death among young individuals, alongside road traffic accidents and diseases.<sup>4</sup> In 2023,

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#### \*Corresponding author:

Ainura Sissenova

Department of Psychology, Faculty of Social Sciences, L.N. Gumilyov Eurasian National University, Astana 010000, Kazakhstan

Email: [sissenova\\_at@enu.kz](mailto:sissenova_at@enu.kz)

Kazakhstan was ranked 19<sup>th</sup> out of 178 countries for suicide rates, based on Wisevoter data that includes adolescent suicides. This highlights an urgent need for targeted prevention programs.<sup>5</sup>

A range of economic, social, and cultural factors can contribute to the development of pre-suicidal attitudes, manifesting as suicidal thoughts or explicit suicidal behaviors.<sup>6,7</sup> The inability to adopt adaptive coping strategies, experiences of social isolation, and a sense of hopelessness can lead individuals to view suicide as an escape from suffering.<sup>8</sup> Studies in crisis psychology suggest that early detection of pre-suicidal attitudes, followed by targeted interventions, can significantly reduce the risk of suicidal behavior among youth.<sup>9,10</sup> However, in Kazakhstan, such interventions and their practical implementation are largely underexplored, thereby necessitating further research to evaluate their effectiveness within the country's cultural and social context.<sup>11</sup>

This study aims to empirically assess the effectiveness of cognitive behavioral therapy for suicide prevention (CBT-SP) in Kazakhstan and identify key factors that contribute to the development of pre-suicidal attitudes among youth. The central hypothesis suggests that a multilevel psycho-corrective intervention can significantly reduce the severity of pre-suicidal attitudes.

This study is particularly relevant due to the urgent need to evaluate intervention and support methods for at-risk youth, and if proven effective, such intervention programs could be implemented nationwide. From a scientific perspective, this research contributes to existing literature by providing new insights into the risk factors, the mechanisms of cognitive-behavioral strategies, and the role of social support in suicide prevention. Practically, this study seeks to validate the CBT-SP program among Kazakhstani university students, with potential applications in psychological centers, emergency psychological services, and educational institutions for early identification and management of suicidal risks. The findings may also provide valuable insights for Kazakhstani policymakers in health care and education, facilitating the development of comprehensive suicide prevention strategies for youth.

## 1.1. LITERATURE REVIEW

Pre-suicidal attitudes constitute a complex interplay of emotional, behavioral, and cognitive manifestations, encompassing suicidal ideation and the active contemplation or planning of suicide methods.<sup>12,13</sup> The expression of such behavior varies among individuals, exhibiting unique characteristics in each case.<sup>14</sup> Notably, the global male suicide mortality rates exceed those of females.<sup>15</sup>

A crucial concept in this context is suicidal ideation, which refers to the process of developing suicidal thoughts, fantasies, and intentions.<sup>16</sup> Several studies identify suicidal ideation as a primary predictor of suicidal behavior and a core component of pre-suicidal attitudes.<sup>17,18</sup> Passive suicidal ideation involves contemplation of death without concrete intent, whereas active suicidal ideation involves both a motivational drive and strategic planning toward suicide.<sup>19</sup> Research suggests that factors such as low self-regulation, feelings of abandonment, social isolation, anxiety, and depressive states are associated with heightened levels of suicidal ideation.<sup>20,21</sup>

Psychological interventions play a crucial role in supporting suicidal youths by fostering adaptive coping strategies in crises, modifying maladaptive cognitive patterns, and reducing suicidal ideation.<sup>22</sup> For instance, CBT has

been shown to be highly effective in altering destructive attitudes, irrational beliefs, and negative thought patterns that contribute to suicidal behavior.<sup>23,24</sup> In addition, dialectical behavior therapy has proven beneficial for individuals with emotional instability and impulsivity, particularly those prone to self-harm.<sup>25,26</sup> Moreover, mindfulness-based therapy and crisis counseling have been shown to enhance self-awareness, improve stress management, foster resilience, and mitigate feelings of isolation.<sup>27</sup>

In certain cases, online psychological support programs and telemedicine consultations through video platforms provide effective alternatives for young individuals who lack access to in-person professional assistance.<sup>28,29</sup>

The cognitive-behavioral theory conceptualizes suicidal attitudes as a consequence of maladaptive cognitive schemas, characterized by automatic negative thoughts about both the self and the external world.<sup>30</sup> From this perspective, pre-suicidal attitudes emerge due to the lack of adaptive coping strategies, chronic stress, and cognitive distortions. Empirical evidence supports this claim, demonstrating a correlation between the severity of cognitive distortions and the occurrence of suicidal thoughts.<sup>31</sup>

In contrast, sociocultural theories interpret suicidal attitudes as a function of an individual's level of integration into society, the quality of their social interactions, and the presence of meaningful social connections.<sup>32</sup> Several studies support this view, indicating that adolescents and young adults with lower levels of social support exhibit higher levels of pre-suicidal attitudes.<sup>33,34</sup>

The psychoanalytic approach views suicide as a manifestation of internal conflict and opposing drives related to life and death.<sup>35</sup> Within this framework, pre-suicidal attitudes are understood as expressions of self-directed aggression or, more often, as conscious or unconscious attempts to escape emotional distress.<sup>36,37</sup> While some studies validate the association between suicidal attitudes and traumatic experiences, cognitive and social factors also contribute to their development.<sup>38,39</sup>

The biopsychosocial approach identifies suicidal attitudes as the result of interactions between psychological trauma, environmental factors, neurochemical dysfunctions, and genetic predisposition.<sup>40</sup> Previous studies suggest a link between reduced serotonergic system activity and increased suicidal vulnerability; however, the exact biological mechanisms underlying this association remain under ongoing discussion.<sup>41,42</sup>

A review of the existing literature reveals substantial gaps in knowledge despite significant advancements in understanding pre-suicidal attitudes. Therefore, further research is required to evaluate the effectiveness of various psychological interventions for individuals exhibiting pre-suicidal behaviors, particularly in developing countries where data remain limited. Given the critical role of sociocultural factors in comprehensively analyzing pre-suicidal attitudes among Kazakhstani youth, this study aims to assess the efficacy of CBT-SP within this specific context. This focus underscores the study's novelty and significance.

Given the absence of clear evidence regarding the most effective psycho-corrective strategies in post-Soviet countries, where access to psychological support remains limited, this research seeks to address this empirical gap within the context of Kazakhstan. By exploring suicidal behavior through the lens of preventive psychological interventions, the study contributes to academic discourse and aims to support at-risk youth in developing sustainable, adaptive coping mechanisms.

## 1.2. PROBLEM STATEMENT

The main objective of this study is to identify the factors contributing to the development of pre-suicidal attitudes among Kazakhstani youth and to assess the effectiveness of CBT-SP intervention in addressing these attitudes.

To achieve this goal, the study outlines the following research objectives:

- (i) To identify the factors contributing to the development of pre-suicidal attitudes among youth in Kazakhstan
- (ii) To evaluate the effectiveness of the CBT-SP intervention in reducing pre-suicidal attitudes among individuals exhibiting suicidal attitudes
- (iii) To conduct semi-structured interviews with participants who underwent the intervention, to gather feedback and develop practical recommendations for its improvement.

## 2. METHODS

The Beck Scale for Suicidal Ideation (BSSI) was employed as the primary assessment instrument.<sup>43</sup> It consists of 19 core items and two preliminary screening questions designed to determine the presence of suicidal ideation. If the participants responded “no” to both screening questions, the assessment is considered negative, indicating the absence of pre-suicidal attitudes. Each of the 19 items was rated on a three-point scale (0, 1, and 2), where 0 indicates the absence of a given feature, 1 denotes moderate severity, and 2 reflects high severity. The total BSSI score ranges from 0 to 38, with the following cutoffs: 0 – 5 indicating no suicidal thoughts, 6 – 9 suggesting mild suicidal ideation, 10 – 19 representing a moderate risk level, and scores of 20 and above signifying a high risk of suicidal behavior.

The adaptation of the BSSI involved a double-translation method, involving forward translation from English to Kazakh and back-translation from Kazakh to English, to ensure the accuracy of semantic equivalence. Validation was conducted through a pilot study ( $n=150$ ), which helped identify potential challenges in interpreting the questionnaire items in Kazakh. A subsequent factor analysis confirmed the preservation of the original unidimensional structure of the scale, with all 19 items demonstrating high factor loadings ranging from 0.74 to 0.85, thereby supporting its validity. In addition, internal consistency was assessed using Cronbach's  $\alpha$  ( $\alpha = 0.89$ ), whereas test–retest reliability, conducted 2 weeks later, yielded a correlation coefficient of  $r = 0.87$  ( $p < 0.001$ ), confirming the stability of the results.

Furthermore, to identify factors contributing to the development of pre-suicidal attitudes, participants provided binary (“yes”/“no”) responses regarding several life circumstances beyond gender. These included parental divorce, parental loss, low social support, experiences of bullying, chronic financial difficulties, and exposure to traumatic events. These additional questions were incorporated alongside the standard BSSI questionnaire.

### 2.1. SAMPLING

A total of 753 participants (415 women and 338 men) were recruited for the study. All participants were first- to third-year students at a university in Kazakhstan, aged between 18 to 21 years. Those who provided voluntary written informed consent were asked to complete the BSSI, along with additional questionnaire items. All collected data were securely stored for subsequent analysis. Detailed information on the

distribution of BSSI scores within the sample is shown in [Table 1](#).

The majority of respondents in the total sample (78%) did not exhibit suicidal ideation (BSSI score 0 – 5). Mild suicidal ideation (BSSI score 6 – 9) was observed in 12.5% of participants, moderate suicidal ideation (BSSI score 10 – 19) in 8.5%, and high suicidal ideation (BSSI score  $>20$ ) in 0.93% of respondents. The overall trend suggests that men are more likely to exhibit both mild and severe forms of suicidal ideation. Among the 165 respondents who responded affirmatively to the two preliminary BSSI questions and had a total score of 6 or higher, individual invitations were extended to participate in the intervention phase of the study. A total of 71 participants agreed to participate in the CBT-SP intervention ([Table 2](#)).

All respondents with high suicidal ideation agreed to participate in the intervention, which was deemed critically important given their condition. Participants were assured of anonymity and the confidentiality of their data during the results discussion. No third parties had access to their information, and communication with the respondents was conducted individually by university psychologists.

### 2.2. STUDY DESIGN

The methodological part of the study was conducted in three stages: (i) diagnostic assessment, (ii) the application of psychological support measures for those who required them and consented to participate, and (iii) follow-up diagnostics and interviews. Beginning in September 2024, the BSSI survey, along with 10 additional clarifying questions, was administered to 753 respondents who voluntarily agreed to participate. Based on the results, eligible participants were invited to participate in the CBT-SP intervention, and those who provided informed consent were selected for the practical part of the study.

Out of 71 participants, 10 groups were randomly formed – nine groups consisting of seven participants each, and one group consisting of eight. These groups were intentionally mixed based on levels of suicidal ideation to reduce the risk of reinforcing negative thought patterns among those with high ideation, promote more balanced group dynamics, and prevent emotional resonance effects that could exacerbate crises among the most vulnerable respondents. The intervention was completed 3 months after its initiation, by the end of November 2024. Post-test assessments using the BSSI were conducted in March 2025 to assess the effectiveness of the intervention after a time interval. At the same time, all participants underwent semi-structured interviews conducted by professional interviewers with experience in psychology and social work. These interviews serve as the basis for developing recommendations to improve the intervention program.

### 2.3. INTERVENTION

The CBT-SP program was selected as the intervention strategy as it is one of the few evidence-based approaches that has demonstrated a significant reduction in the risk of repeated suicide attempts.<sup>44,45</sup> Furthermore, this program aligns with international standards for providing assistance to suicidally vulnerable patients, as recommended by the National Action Alliance for Suicide Prevention.<sup>46</sup> CBT-SP features a clear structure and is oriented toward practical application, which is crucial for working with young individuals who face

**Table 1. Beck Scale for Suicidal Ideation results among all respondents (n=753)**

BSSI (total score)	Value	Total	Men	Women	Mean age	SD
0 – 5	No suicidal ideation	588	240	348	19.48	0.41
6 – 9	Mild suicidal ideation	94	56	38	19.53	0.56
10 – 19	Moderate suicidal ideation	64	35	29	19.76	0.23
Above 20	High suicidal ideation	7	7	0	19.67	0.39
Total/mean		753	338	415	19.51	0.40

Abbreviations: BSSI: Beck Scale for Suicidal Ideation; SD: Standard deviation.

**Table 2. Beck Scale for Suicidal Ideation results among respondents eligible for intervention (n=71)**

BSSI (total score)	Value	Total	Men	Women	Mean age	SD
6 – 9	No suicidal ideation	23	14	9	19.74	0.23
10 – 19	Mild suicidal ideation	41	17	24	19.51	0.49
Above 20	Moderate suicidal ideation	7	7	0	19.44	0.72
Total/mean		71	38	33	19.74	0.48

Abbreviations: BSSI: Beck Scale for Suicidal Ideation; SD: Standard deviation.

high levels of stress and limited access to long-term psychotherapy. The choice of CBT-SP for testing within the Kazakh context was motivated by its combination of crisis planning components, cognitive restructuring, and emotional regulation skills. Figure 1 outlines the intervention's activities, objectives, and implementation methods.

The intervention program lasted 12 weeks, from September 2024 to November 2024, and included group sessions that were conducted twice a week for 120 min each. A total of 10 groups were formed (nine groups with seven participants and one group with eight). The sessions were held at a psychological center, providing a soundproof room with chairs arranged in a circle. The groups were led by two clinical psychologists, both trained in CBT and specifically in the CBT-SP methodology. Each psychologist was a qualified professional with at least ten years of experience in the field of suicidal behavior and conducted five group sessions per week, one session per day. After the intervention, from December to February, the participants were invited to attend optional open psychological support groups once a month. As observed in practice, almost all participants (64 individuals, or 90.14%) requested additional support.

#### 2.4. DATA ANALYSIS

Data analysis was conducted using the Statistical Package for the Social Sciences version 26 (IBM Corporation, USA). In the first stage, descriptive and analytical statistics were calculated for BSSI scores among respondents exhibiting suicidal ideation, with group differences assessed using the independent non-parametric *t*-test. In addition, multiple regression analysis was performed to accurately identify the factors contributing to the development of pre-suicidal tendencies. Subsequently, descriptive-analytical statistics were used to compare pre-test and IBM Corporation, New York, USA, post-test BSSI scores, with significance determined using the paired *t*-test. The analysis of semi-structured interviews – which reflected the participants' feedback on the intervention – was conducted using the NVivo software (QSR International Pty Ltd., USA) to provide practical recommendations for improving the intervention. This process involved both automated and manual coding to extract key

#### Activities in cognitive behavioral therapy for suicide prevention

- Cognitive restructuring
- Development of a safety plan
- Assessment of automatic thoughts
- Training in emotional regulation skills
- Problem-solving thinking
- Social support and communication
- Development of cognitive flexibility
- Relapse prevention

#### Goals of cognitive behavioral therapy for suicide prevention activities

- To change destructive beliefs and develop cognitive flexibility
- To create an individual action plan for dealing with suicidal thoughts
- To identify negative automatic thoughts and ways to transform them
- To teach participants how to manage stress and negative emotions
- To develop strategies for adaptive problem-solving
- To enhance the ability to seek support and build healthy social connections
- To develop skills for shifting perspectives and reducing cognitive rigidity
- To prepare participants for long-term management of crisis situations

#### Implementation methods for cognitive behavioral therapy for suicide prevention activities

- Analyzing negative thoughts and working with automatic beliefs
- Discussing potential crisis situations and developing an action plan
- Completing cognitive worksheets and addressing cognitive distortions
- Meditation, breathing exercises, and relaxation techniques
- Analyzing problem situations and generating alternative solutions
- Group training and role-playing social interactions
- Practical exercises for cognitive flexibility and alternative perspectives
- Applying acquired skills in simulated situations

### Figure 1. Activities, objectives, and implementation methods of cognitive behavioral therapy for the suicide prevention program

themes and frequency analysis was conducted to identify the main positive aspects and problematic issues related to CBT-SP.

#### 2.5. ETHICAL ISSUES

The study received approval from the Ethics Committee of the participating university and adhered to key ethical principles, including obtaining written voluntary consent to participate and ensuring confidentiality. All participants were informed of their right to withdraw from the study at any time without the need to provide a reason. Notably, during



the intervention period, no participants chose to withdraw. All collected data were stored in an anonymized format, with access restricted to members of the research team.

## 2.6. RESEARCH LIMITATIONS

The selection of potential predictors of suicidal behavior was limited to a few existing variables, which may have excluded other relevant factors. This constraint limits the comprehensiveness of understanding the development of suicidal tendencies. Although the BSSI is a reliable and validated tool, it may not fully account for individual differences in the dynamics of suicidal thoughts. In addition, this study only focused on a sample of youth from one university in Kazakhstan, which may limit the generalizability of the findings to the broader population. Furthermore, the implementation of CBT-SP requires resources such as appropriate facilities, specially trained psychotherapists with experience and competencies, and compensation for their services, all of which must be considered when implementing the program.

## 3. RESULTS

To identify the factors contributing to the development of pre-suicidal tendencies among youth in Kazakhstan, Table 3 presents descriptive statistics of BSSI scores for

respondents with suicidal ideation. Differences between groups were assessed using an independent non-parametric *t*-test.

Based on the BSSI, the results indicate significant differences in levels of suicidal ideation among youth depending on social and psychological factors. Men exhibit higher BSSI scores than women, while parental divorce and the loss of one parent are associated with higher BSSI scores ( $p=0.000$ ). Low levels of social support, experiences of bullying, and chronic financial difficulties are also significantly more common among participants with high suicidal ideation compared to those without these stressors ( $p=0.000$ ). The presence of past traumatic events is associated with more pronounced suicidal tendencies than their absence. Table 4 presents the results of the multiple regression analysis.

The most significant predictor is the experience of bullying ( $\beta = 0.421$ ,  $p=0.0001$ ), indicating a strong association with elevated suicidal thoughts. Past traumatic events ( $\beta = 0.397$ ,  $p=0.0008$ ) and low levels of social support ( $\beta = 0.386$ ,  $p=0.0005$ ) also show strong predictive value. Chronic financial struggles ( $\beta = 0.369$ ,  $p=0.0022$ ), parental death ( $\beta = 0.358$ ,  $p=0.0037$ ), and parental divorce ( $\beta = 0.342$ ,  $p=0.0012$ ) are also significant predictors, though with slightly lower strength. Gender ( $\beta = 0.355$ ,  $p=0.0019$ ) emerges as a significant factor as well, further confirming gender differences in suicidal ideation, with higher levels observed among men.

**Table 3. Analytical statistics for the Beck Scale for Suicidal Ideation scores among respondents with suicidal ideation ( $n=165$ )**

Factors	Mean value	Standard error of the mean	Standard deviation	Variance	Skewness	Kurtosis
Gender						
Men	17.80	1.10	4.25	11.35	-1.12	0.22
Women	13.30	0.85	3.55	10.05	-1.25	-0.15
<i>p</i> -value			0.000			
Parental divorce						
Parents divorced	16.50	1.25	4.40	12.30	-1.05	0.18
Parents are still together	11.75	0.88	3.35	9.25	-1.18	0.20
<i>p</i> -value			0.000			
Parental death						
One parent deceased	18.90	1.30	4.50	12.75	-1.02	0.28
Both parents are still alive	14.80	0.92	3.70	10.85	-1.09	-0.22
<i>p</i> -value			0.000			
Level of family support						
Low level	18.05	1.35	4.80	13.20	-1.08	0.35
Adequate level	12.40	1.00	3.85	11.15	-1.15	0.12
<i>p</i> -value			0.000			
Experience of bullying						
Present	17.16	1.45	5.10	14.20	-1.22	0.40
Absent	13.65	0.95	3.75	10.55	-1.07	-0.18
<i>p</i> -value			0.000			
Experience of chronic financial hardship						
Present	17.88	1.28	4.65	12.90	-1.15	0.30
Absent	10.12	0.90	3.55	9.75	-1.08	-0.20
<i>p</i> -value			0.000			
History of traumatic events						
Traumatic events experience	18.10	1.33	4.70	13.05	-1.10	0.25
No traumatic events experience	12.90	0.87	3.50	9.65	-1.12	-0.28
<i>p</i> -value			0.000			

Note: All *p* values are considered statistically significant at  $\leq 0.005$ .

To assess the effectiveness of a targeted psychological intervention – specifically the CBT-SP intervention program – on the level of pre-suicidal attitudes among youth, the pre- and post-test BSSI scores were compared using the paired *t*-test. The data are shown in Table 5.

The results demonstrate a significant reduction in suicidal ideation levels following the CBT-SP program. The BSSI score decreases by 4.73 points in participants with mild suicidal ideation, while those with moderate ideation show a reduction of 6.07 points ( $p=0.000$  in both cases). Respondents with high levels of suicidal ideation demonstrate the most significant improvement, with BSSI scores decreasing from a critically high 21.17 to 13.64, reflecting a reduction of 7.53 points. Since significant reductions in suicidal ideation occur across all categories following the intervention, these findings support the effectiveness of CBT-SP in working with individuals displaying suicidal tendencies.

To collect participant feedback on the intervention and provide practical recommendations for improving CBT-SP,

**Table 4. Results of the multiple regression analysis for the Beck Scale for Suicidal Ideation scores among respondents with suicidal ideation ( $n=165$ )**

Factors	$\Delta R^2$	$\beta$ (coefficients)	<i>p</i> -value
Gender	0.0188	0.355	0.0019
Parental divorce	0.0143	0.342	0.0012
Parental death	0.0146	0.358	0.0037
Low level of support	0.0199	0.386	0.0005
Bullying experience	0.0235	0.421	0.0001
Chronic financial struggles	0.0173	0.369	0.0022
Past traumatic events	0.0212	0.397	0.0008

Note: All *p*-values are considered statistically significant at  $\leq 0.005$ .

**Table 5. Descriptive statistics for pre- and post-test Beck Scale for Suicidal Ideation scores among respondents participating in the intervention ( $n=71$ )**

BSSI score	Pre-test	Post-test
Mild suicidal ideation		
Mean	7.16	2.43
Standard deviation	0.740	0.451
Standard error of the mean	0.389	0.249
Variance	-1.370	-1.391
Kurtosis	-0.283	-0.143
<i>p</i> -value	0.000	
Moderate suicidal ideation		
Mean	14.51	8.44
Standard deviation	2.032	0.540
Standard error of the mean	0.782	0.189
Variance	-0.054	-0.204
Kurtosis	-1.390	-1.360
<i>p</i> -value	-0.000	
Severe suicidal ideation		
Mean	21.17	13.64
Standard deviation	6.982	0.695
Standard error of the mean	1.057	0.271
Variance	-2.063	-0.524
Kurtosis	-1.233	-1.014
<i>p</i> -value	0.000	

a semi-structured interview was conducted and analyzed using NVivo software. The results are shown in Figure 2.

The most frequently mentioned theme is emotional support during the intervention, with participants noting a reduction in “feelings of isolation” as the main benefit. Interestingly, 87.32% of respondents (62 people) report a decrease in feelings of loneliness and abandonment. One male participant from the high-suicidal ideation group shared, “Before joining the program, I could not see any light. I felt like I was fighting the world alone. I did not want to live because I saw no meaning, but when I joined the group, I realized that my suffering was not unique – that there were others around me going through similar problems.”

Post-program support also plays a significant role, with 53 mentions. However, interviews reveal that some participants felt afraid to seek help once the main program ended. One woman from the moderate suicidal ideation group shared, “I sat there wondering whether I should even attend the support sessions. I had already received help, and there would be a new group. I was afraid I would not fit in with the new group and that the organizers would judge me as if I had not managed to cope within the 3 months given to me.” This highlights the need for clearer guidance from the therapist, ensuring better communication about how post-program support will take place, its importance, and how to request it.

The effectiveness of cognitive restructuring, mentioned 42 times, is highly appreciated; however, some participants find it very difficult to change established thought patterns. While this challenge is expected, participants recommend incorporating more practical exercises to support the process.

The practical applicability of CBT-SP techniques, grounded in the CBT approach, is mentioned 32 times, demonstrating that stress management methods are beneficial. However, some participants felt uncomfortable when one group member took an excessive amount of time to discuss their case. One man from the moderate ideation group shared, “It bothered me when one participant could not finish their story within the allocated time, and even though our coach tried to adhere to the schedule, sometimes it was not followed.” Such occurrences are common in group settings, making “clarifying the schedule” one of the recommended strategies. However, it is crucial to acknowledge the individual nature of these situations, where the therapist may recognize that a participant urgently needs to speak and receive support, even if it exceeds the designated time.

#### 4. DISCUSSION

This study identifies a significant role of gender in the level of suicidal ideation ( $\beta = 0.355$ ,  $p=0.0019$ ), which aligns with previous findings showing that male suicidality is largely influenced by cultural norms that restrict emotional expression and interpersonal connections.<sup>15</sup> The longitudinal analysis reveals latent classes of individuals differing in levels of suicidality, including vulnerable, suicidal, and non-at-risk groups.<sup>3</sup> This corresponds with the results of the current study, where analysis of BSSI levels enables the identification of groups with varying degrees of suicidal ideation and the assessment of the dynamics of their conditions within the intervention framework. The data highlight the importance of long-term monitoring of at-risk groups,<sup>3</sup> which is further supported in this study, where 87.32% of participants indicate the necessity of post-program support.

## Effectiveness of cognitive restructuring

- Frequency of mentions: 42
- + Helps change negative thoughts, develops awareness of one's emotions
- – It was difficult to change habitual thought patterns
- ✓ Add more practical exercises

## Emotional support during therapy

- Frequency of mentions: 64
- + A sense of understanding from participants, reduction of isolation
- – Lack of individual attention due to some participants requiring more time than others
- ✓ Expand individual support, therapist should better monitor the schedule

## Practical applicability of techniques

- Frequency of mentions: 32
- + The techniques were useful in everyday stressful situations
- – Some techniques seemed difficult to apply independently
- ✓ Provide participants with additional materials and checklists

## Post-program support

- Frequency of mentions: 53
- + After completing the program, participants felt that they were not alone and knew where to seek support
- – Some participants felt shame and fear when asking for support, as if it were "extra," implying they hadn't managed on their own
- ✓ Provide participants with clear instructions on post-intervention support, emphasizing its importance and normality

**Figure 2. Results of semi-structured interviews with intervention participants (n=71) and suggested recommendations for improving cognitive behavioral therapy for suicide prevention. Note: A positive sign “+” indicates positive feedback; a negative sign “–” represents negative feedback; and a tick “✓” denotes suggested recommendations for improving the intervention program.**

A previous study analyzed suicidal thoughts among visitors of primary and religious care centers in Thailand, revealing a link between mental disorders, chronic diseases, and the level of social support.<sup>37</sup> This aligns with the findings of the present study, where low social support is identified as a significant predictor of suicidal ideation ( $\beta = 0.386$ ,  $p=0.0005$ ). The results also align with another study that evaluates existing approaches to suicide prevention and highlights the effectiveness of CBT as a key intervention.<sup>7</sup>

An analysis of risk factors in one study reveals a connection between psychosocial identity, interpersonal closeness, and suicidality, highlighting the importance of developing a stable identity and close interpersonal relationships as protective factors that reduce the risk of suicidal thoughts.<sup>10</sup> This finding aligns with the present study, where low levels of social support emerge as one of the most significant risk factors among individuals with suicidal tendencies. Furthermore, attention must be given to emotional regulation in pre-suicidal behavior.<sup>12</sup> The research notes that pre-suicidal decisions often occur under conditions of heightened emotional instability, highlighting the need for a deeper understanding of emotional regulation mechanisms. This correlates with the current findings, where participants highly value cognitive restructuring as a key component of the intervention.

In addition, another study suggests that beliefs about the uncontrollability of emotions increase suicidal ideation,<sup>47</sup> supporting the present study's finding of the need for additional practical exercises in cognitive restructuring and emotional regulation. In this study, low levels of social support, traumatic events, and experience of bullying are the most significant predictors of suicidality. Similarly, one study reveals that childhood trauma, high levels of neuroticism and psychoticism, and dysfunctional attitudes influence suicidal ideation through a mediating pathway.<sup>31</sup> Moreover, high levels of social support exert the strongest influence in reducing suicidal thoughts,<sup>33</sup> aligning with the

findings of this study and highlighting the need for active social interaction during the process of overcoming suicidal thoughts.

Furthermore, one study reports that participants who underwent CBT-SP experienced a significant decrease in suicidal thoughts, consistent with the findings of this study. It shows that CBT leads to a significant reduction in suicidal thoughts (standardized mean difference =  $-0.28$ ) and lowers the likelihood of suicide attempts (relative risk =  $0.77$ ).<sup>24</sup> These results further support CBT as an effective and cost-efficient method suitable for integration into clinical practice and prevention strategies. Another study reports that internet-based CBT effectively reduces depression levels in individuals experiencing suicidal thoughts but does not significantly impact anxiety or feelings of hopelessness.<sup>23</sup> This highlights the need to incorporate additional components targeting emotional regulation and perceived hopelessness within digital intervention, whether delivered through virtual environments or online communication platforms. In addition, another study underscores the importance of carefully designed short-term interventions and safety plans as strategies for managing suicidal thoughts.<sup>22</sup> In the present study, many participants highlight that post-program support plays a key role in reducing feelings of loneliness, aligning with the findings that long-term support is crucial for participants following intervention.

## 5. CONCLUSION

The findings reveal several significant factors influencing the development of pre-suicidal attitudes among youth in Kazakhstan, with experiences of bullying ( $\beta = 0.421$ ,  $p=0.0001$ ), traumatic events ( $\beta = 0.397$ ,  $p=0.0008$ ), and low social support ( $\beta = 0.386$ ,  $p=0.0005$ ) emerging as the most prominent predictors. Analysis of pre- and post-test data demonstrates a significant reduction in suicidal ideation

following the CBT-SP program, with the most pronounced decrease observed in participants with high suicidal ideation (a reduction of 7.53 points,  $p=0.000$ ). In addition, semi-structured interviews with intervention participants highlight key strengths and weaknesses of the program, alongside practical recommendations to enhance its effectiveness and cultural relevance within the Kazakh context. Overall, the study highlights the importance of a comprehensive approach to supporting youth in addressing rising levels of suicidal ideation. The findings hold significant scientific and practical value by identifying key sociopsychological factors that influence the development of suicidal attitudes and confirming the effectiveness of CBT-SP as an intervention. In addition, the study offers recommendations to improve the program. Insights into the roles of social support, traumatic experiences, and gender deepen the understanding of suicidal ideation among youth. These results provide valuable guidance for governmental and non-governmental organizations involved in developing suicide prevention strategies.

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#### CONFLICT OF INTEREST

The research has no conflicts of interest.

#### AUTHOR CONTRIBUTIONS

*Conceptualization:* Aliya Mambetalina

*Data curation:* Zhanar Kereimaganbetova

*Methodology:* Gulnaz Ganiyeva

*Resources:* Gulpara Zhukenova

*Writing—original draft:* Bibianar Baizhumanova

*Writing—review & editing:* Ainura Sissenova

#### ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. The research was approved by the local Ethics Committee of L.N. Gumilyov Eurasian National University and K. Zhubanov Aktobe Regional University. Informed consent was signed by participants.

#### CONSENT FOR PUBLICATION

All participants gave their written informed consent.

#### DATA AVAILABILITY STATEMENT

All data generated or analyzed during this study are included in this published article.

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