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Impact of Maladaptive Cognitive Schemas on Suicidal Behavior in Adolescents During the COVID-19 Pandemic: A Predictive Study

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Abstract

This study examines how certain maladaptive cognitive schemas—such as feelings of defectiveness, failure, dependence, vulnerability to harm or illness, social isolation, incompetence, and enmeshment/undeveloped self—can predict suicidal thoughts and behaviors in adolescents during the COVID-19 pandemic. The research, conducted from 2020 to 2022, included 58 adolescents (61% male, 39% female), all of whom had at least 9 years of schooling. The Young Cognitive Schema Questionnaire (YSQ-S3) and the Beck Scale for Suicidal Ideations (BSSI) were used to collect data while ensuring ethical guidelines were followed. A multiple linear regression model was used to assess the data. The findings indicated that schemas related to defectiveness, vulnerability to harm, and dependence/incompetence were significant predictors of suicidal behaviors. However, no significant predictive value was found for failure, enmeshment/undeveloped self, or social isolation. These results point to the need for further research to further examine these relationships.

Keywords: Maladaptive cognitive schemas, Suicidal behavior, COVID-19, Adolescents

Introduction

The COVID-19 pandemic, which began in March 2020, led to worldwide lockdowns and had a profound impact on people's mental health, particularly teenagers. Anxiety and depression became more widespread during this time, leading to an increase in suicidal thoughts and behaviors. This period highlighted the psychological strain on vulnerable groups, especially those at higher risk for mental health issues [1].

During the pandemic, suicidal thoughts among adolescents were linked to factors such as anxiety, loneliness, dysfunctional family dynamics, insomnia, depression, alcohol abuse, and a history of mental health problems or past suicide attempts [2-5].

Many studies have focused on the factors contributing to suicidal behavior. Suicidal ideation, which involves thoughts of life being unfulfilling and a tendency toward self-destruction, is a key area of concern. Factors such as psychiatric conditions, childhood adversity, and emotional disorders have been identified as common risk factors for suicide [6]. Specifically, unmet emotional needs in childhood can significantly impact mental health and increase the risk of suicide attempts [7].

Research has shown that maladaptive cognitive schemas and dysfunctional schema modes are prevalent among individuals with psychiatric disorders. A higher occurrence of these schemas has been observed in patients with depression and anxiety disorders [8-10]. Understanding the role of these schemas in childhood psychopathology is crucial for improving therapeutic approaches [11].

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Maladaptive cognitive schemas are personal coping mechanisms formed to manage unresolved emotional needs, often leading individuals to suppress emotions or meet high expectations. While these strategies may offer temporary relief, they fail to address the core issues, leaving individuals with a sense of hopelessness. These basic schemas are often formed in early childhood and influence beliefs about oneself and others [12, 13].

Dysfunctional response patterns in adolescents often stem from unmet emotional needs and emotional vulnerability. This vulnerability leads to feelings of sadness, fear, and helplessness, and the activation of maladaptive cognitive schemas can trigger self-destructive coping behaviors [14, 15]. Research has linked these schemas to self-harm, emotional inhibition, and social isolation [16, 17].

In addition, emotional deprivation, lack of self-control, and experiences of mistrust and abuse contribute to self-harm behaviors [18]. Studies suggest that perceived parental rejection is strongly associated with maladaptive cognitive schemas and self-harming tendencies in both interpersonal and intrapersonal contexts [19]. Emotional deprivation and impairment are critical factors in suicide prevention [20].

This study aims to explore the influence of maladaptive cognitive schemas on suicidal behavior in adolescents during the COVID-19 pandemic. It is based on the assumption that adolescence is a period of emotional vulnerability, and the pandemic has exacerbated this vulnerability through social isolation and other individual factors. Understanding these risk factors is essential for developing effective prevention programs for adolescent suicide.

Materials and Methods

Instruments

The Young Cognitive Schema Questionnaire-Short Form (YSQ-S3) was utilized to assess maladaptive cognitive schemas, while suicidality was measured using the Beck Scale for Suicidal Ideations (BSSI), a widely recognized tool for evaluating suicidal thoughts and behaviors.

Procedure

The study was carried out between 2020 and 2022, with participants undergoing psychological assessments at CIP Cristian Delcea. The sample was selected to focus on individuals aged 17–19 years, a critical period for examining the psychological characteristics of late adolescence and early adulthood [21].

Inclusion/exclusion criteria

The criteria for inclusion in the study were: (1) participants aged between 17 and 19 years, and (2) no history of neurodevelopmental or neurocognitive disorders.

Ethical considerations

All participants provided informed consent, which outlined the goals of the study, their voluntary participation, and their rights under Regulation (EU) 2016/679 regarding the protection and processing of personal data. For minors, consent was also obtained from their legal guardians.

Participants

The sample consisted of 58 adolescents (39% female, 61% male), all aged 17–19 years, with a minimum of 9 years of education.

Data analysis

The data were analyzed using SPSS (Statistical Package for the Social Sciences) version 2.6. Descriptive statistics and comparison tests were performed, with a significance level set at $P < 0.05$.

Results and Discussion

This study analyzed the relationship between suicidal behavior and various maladaptive cognitive schemas, including defectiveness/shame, vulnerability to harm, failure, social isolation, dependence/incompetence, and emotional inhibition.

To explore how these cognitive patterns may predict suicidal tendencies during the pandemic, we employed a linear regression analysis. The summary of descriptive statistics for these variables is presented in **Table 1**.

Table 1. Descriptive indicators

	Mean	Std. Dev	N
Beck suicidal scale	23.5	1.42	58
Defectiveness Shame	14.21	1.89	58
Vulnerability to harm or illness	16.32	1.55	58
Failure	13.72	2.93	58
Dependence incompetence	15.85	2.12	58
Social isolation	14.27	1.23	58

Enmeshment/ undeveloped self	17.14	2.19	58

The descriptive analysis reveals that the average scores for the maladaptive cognitive schemas reflect a moderate to high prevalence of the cognitive patterns examined in this study.

Additionally, the regression model assumptions were tested to ensure the accuracy of the data. No multicollinearity was found among the independent variables, with all coefficients remaining below the accepted threshold of 0.7. The correlations between the maladaptive cognitive schemas and suicidal risk were analyzed and are summarized in **Table 2**.

Table 2. Correlations between maladaptive cognitive schemas and suicidal behaviors

	r	Sig.
Defectiveness shame	.689	.000
Vulnerability to harm or illness	.712	.000
Failure	.591	.021
Enmeshment/ undeveloped self	.611	.000
Social isolation	.584	.035
Dependence incompetence	.810	.000

The maladaptive cognitive schemas proposed in the model show strong correlations with suicidal behavior, with values exceeding 0.5. The strongest correlation was found between dependence incompetence (DI) ($r = 0.810$, $P = 0.000$) and suicidal behavior, while the weakest was observed between Social Isolation (SI) ($r = 0.584$, $P = 0.035$) and suicidal behavior.

Regarding the regression model coefficients, tolerance indicates the extent to which each independent variable's variability is accounted for. All values were below the acceptable threshold of 1.0, and the variance inflation factor (VIF) also stayed below the threshold of 10, indicating no evidence of multicollinearity in the dataset. A multiple linear regression analysis was conducted with a 95% confidence interval, which yielded a good model fit: $F(5,194) = 153.32$, $P = 0.000$, Adjusted $R^2 = 0.79$, and $R^2 = 0.79$.

The analysis revealed that defectiveness/shame (DS) ($\beta = 0.28$, $t = 5.62$, $P < 0.001$), dependence incompetence (DI) ($\beta = 0.32$, $t = 6.53$, $P < 0.001$), and vulnerability to harm or illness (VH) ($\beta = 0.42$, $t = 8.81$, $P < 0.001$) directly influenced suicidal behavior. No significant effects were found for failure (FA) ($\beta = 0.08$, $t = 1.60$, $P = 0.11$), enmeshment/undeveloped self (EM) ($\beta = 0.05$, $t = 1.44$, $P = 0.15$), or social isolation (SI) ($\beta = 0.12$, $t = 1.93$, $P = 0.21$).

Although multiple maladaptive cognitive schemas were tested as predictors in the model, significant effects on suicidal behavior and ideation were found specifically for defectiveness/shame (DS), vulnerability to harm or illness (VH), and dependence incompetence (DI).

The defectiveness/shame (DS) schema is linked to the belief that something is inherently wrong with oneself, leading to feelings of social inadequacy. During the pandemic, adolescents, already in a vulnerable emotional state, experience heightened feelings of worthlessness and fear regarding their perceived flaws. Persistent guilt and concerns about their inadequacies impact their social and romantic relationships, potentially triggering suicidal thoughts.

The 'vulnerability to harm or illness' schema, which involves catastrophic thinking and exaggerated fears about potential life-threatening events, appears to be a distinct risk factor for suicidal ideation, especially among anxious or depressed individuals. Suicidality is thought to emerge from feelings of entrapment and hopelessness, a sensation that escape from these overwhelming emotions is impossible. This schema reflects the belief that individuals cannot protect themselves from perceived threats, such as the COVID-19 pandemic, and that they will be unable to manage the consequences when calamity strikes.

Finally, dependence/incompetence reflects the perception of being unable to perform daily tasks effectively without significant external support, often resulting in feelings of helplessness. These cognitive patterns also seem to play a critical role in suicidal behaviors during this period.

The enmeshment/undeveloped self-schema refers to a lack of a stable, clear sense of identity. Adolescents in this category tend to be overly influenced by "enmeshed figures," leading to an unstable sense of self [22]. The social isolation caused by the pandemic exacerbates these issues, with emotionally vulnerable teenagers facing significant emotional disruptions and a profound sense of emptiness.

In the case of the failure schema, which suggests an inevitable sense of inadequacy compared to peers in terms of achievement, no significant connection to suicidal behavior was found in this study. The statistical results did not support a direct link between this cognitive

pattern and suicidal tendencies in the sample under consideration [23-32].

Conclusion

This research provides valuable insights into how maladaptive cognitive schemas, particularly those linked to catastrophic thinking, might predict suicidal ideation and behaviors in adolescents during the pandemic. Given the severe risks posed by suicidal behaviors, it is critical to identify these contributing factors and develop targeted prevention strategies. However, further studies are necessary to confirm and expand upon these findings before they can be generalized.

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