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Original Research

Relationship Between Childhood Trauma and Suicidal Behavior in Individuals With Dual Diagnosis: The Mediating Role of Alexithymia and Mental Health

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Abstract

Background: Suicide is a significant public health concern, and several psychological variables, such as childhood trauma, have been studied as risk factors, but this link remains unclear. The study aims to examine the association between childhood trauma (i.e., physical and emotional abuse/neglect and sexual abuse) and suicide, as well as to analyze the mediating role of alexithymia and mental health (i.e., depression and anxiety) in this relationship. **Methods**: A total of 75 individuals with dual diagnosis (on average, 44.15 years old, SD = 12.15; 82.7% males) completed four questionnaires: Childhood Trauma Questionnaire, Toronto Alexithymia Scale, Symptoms Assessment-45, and Paykel Suicide Scale. Structural equation modeling was performed to examine the mediating role of alexithymia and mental health in the relationship between childhood trauma and suicidal behavior. **Results**: Both alexithymia and mental health problems mediate the relationship between childhood trauma and suicidal behavior. **Conclusions**: This finding underscores the importance of screening for and addressing alexithymia and mental health in clinical practice, especially in suicide-prevention interventions.

Keywords: dual diagnosis; childhood trauma; suicidal behavior; alexithymia; mental health

Relación Entre el Trauma Infantil y la Conducta Suicida en Personas con Patología Dual: El Papel Mediador de la Alexitimia y la Salud Mental

Resumen

Antecedentes: El suicidio representa un importante problema de salud pública, y diversas variables psicológicas han sido estudiadas como factores de riesgo, entre ellas el trauma infantil; sin embargo, esta relación sigue siendo poco clara. El estudio tiene como objetivo examinar la asociación entre el trauma infantil (i.e., abuso físico y emocional, negligencia física y emocional, y abuso sexual) y el suicidio, así como analizar el papel mediador de la alexitimia y la salud mental en esta relación. **Método**: 75 personas con patología dual (la edad media fue de 44,15 años, DT = 12,15; 82,7% hombres) completaron cuatro cuestionarios: el Cuestionario de Trauma Infantil, la Escala de Alexitimia, el SA-45 y la Escala de Suicidio de Paykel. Se empleó un modelo de ecuaciones estructurales para examinar el papel mediador de la alexitimia y la salud mental en la relación entre trauma infantil y conducta suicida. **Resultados**: Tanto la alexitimia como los problemas de salud mental mediaron la relación entre el trauma infantil y la conducta suicida. **Conclusiones**: Estos hallazgos subrayan la importancia de evaluar y abordar la alexitimia y los problemas de salud mental en la práctica clínica, especialmente en las intervenciones dirigidas a la prevención del suicidio.

Palabras Claves: patología dual; trauma infantil; conducta suicida; alexitimia; salud mental

1. Introduction

Suicidal ideation and attempts constitute a significant public health concern, given that they represent the foremost non-natural cause of mortality, contributing to an annual figure of over 700,000 deaths on a global scale (World Health Organization, 2019). Furthermore, suicide stands out as a main cause of disability, as the human cost stemming from suicidal behaviors is substantial, impacting individuals, families, communities, healthcare systems, and society at large.

Research has consistently shown that suicide is a complex and multifactorial phenomenon resulting from the interplay of genetic, neurobiological, psychological, and social factors (Franklin et al., 2017; Guzmán et al., 2019; Turecki et al., 2019). To understand this complexity, several theoretical models have been proposed. Among them, the integrated motivational-volitional (IMV) model of suicidal behavior (O'Connor, 2011; O'Connor and Kirtley, 2018) provides a comprehensive framework that distinguishes between predisposing factors, motivational moderators, and volitional facilitators, offering an integrated understanding of how suicidal ideation emerges and progresses to suicidal acts. This model supports a multifactorial approach and highlights potential mechanisms that may explain individual vulnerability and resilience.

It is noteworthy that individuals with substance use disorders constitute a particularly vulnerable population, displaying an elevated susceptibility to engage in suicidal behaviors (i.e., suicidal ideation and suicide attempts) (Arribas-Ibar et al., 2017; Darvishi et al., 2015; Youssef et al., 2016). Specifically, a notable prevalence of individuals with substance use disorders, ranging between 40% and 60%, have reported a history of suicide attempts (Yuodelis-Flores and Ries, 2015). Compared to the general population, those with alcohol use disorder have an almost 10-fold increase in the risk of suicide-related mortality, whereas polydrug users reach a nearly 17-fold increase in suicide rates (Wilcox et al., 2004). This risk is increased when substance use disorder co-occurs with concurrent psychological disorders, widely known as dual diagnosis (Szerman et al., 2012; Youssef et al., 2016), including major depression, and bipolar, schizophrenia, posttraumatic stress, and personality disorders (Kolla et al., 2008; Melle et al., 2010; Oquendo et al., 2010; Rojas et al., 2014; Yuodelis-Flores and Ries, 2015). Due to all the above, it is important to increase attention, both in terms of treatment strategies and research, to comprehending suicidal behavior in individuals with substance use disorders and dual diagnosis.

Prior studies have yielded insights highlighting childhood trauma as a pivotal risk factor linked with suicide-related behaviors (Angelakis et al., 2020; Rogerson et al., 2023). Physical and emotional abuse and neglect during childhood, and especially sexual abuse, have emerged as key contributors to the manifestation of suicidal ideation and subsequent suicide attempts (Zatti et al., 2017). Notably, 80% who had attempted suicide in adulthood and 40% who had suicidal ideation reported a history of childhood trauma (O'Connor et al., 2018). Childhood trauma also represents a key predictor among individuals with substance use disorders (Lotzin et al., 2019; Roy, 2009, 2010; Roy and Janal, 2007; Vaszari et al., 2011). Studies have shown that a history of childhood trauma can have a significant impact on the development, severity, and progression of substance use disorders. This means that people with dual diagnosis often start using substances at a younger age, escalate their use earlier, and experience more severe psychological symptoms overall (Farrugia et al., 2011; Lotzin et al., 2019).

Despite the growing evidence of the relationship between childhood trauma and suicidal behaviors, the mechanism linking these variables remains unclear. Aligned with the IMV model, certain psychological constructs may act as mediators between distal risk factors and suicidal outcomes. Alexithymia is a personality construct representing a disturbance in the affective and cognitive function of emotion processing, characterized by difficulty identifying and describing one's emotions. Individuals with alexithymia may struggle to recognize emotional cues in themselves and others, leading to a diminished capacity for emotional expression and introspection (Hogeveen and Grafman, 2021). This construct has been studied as a risk factor for suicide (Davey et al., 2018; Greene et al., 2020; Khan and Jaffee, 2022; Norman et al., 2020), both in general population and psychiatric and clinical population (De Berardis et al., 2017; Hemming et al., 2019; Iskric et al., 2020; Norman et al., 2020). Additionally, alexithymia has been studied as a strong risk factor for psychiatric conditions (e.g., depression) (McGillivray et al., 2017) as well as substance use disorders (Evren and Evren, 2006; Ghorbani et al., 2017; Sakuraba et al., 2009). Prior research has found an association between childhood trauma and the presence of alexithymia in the population of individuals with substance use disorders (Evren et al., 2009; Kopera et al., 2020; Zdankiewicz-Ścigała and Ścigała, 2018, 2020). People who cannot differentiate emotional states may experience distress because they cannot employ effective strategies to regulate their emotions, and this could ultimately lead them to engage in suicidal behavior as a way of coping with stressors.

On the other hand, children who experience some kind of abuse or neglect show high rates of physical and mental health issues in adulthood, especially depressive and anxious symptomatology (Lu et al., 2008; McKay et al., 2021, 2022). This could impact suicide behavior both in general population (Orsolini et al., 2020) and dual-diagnosis individuals (Devin et al., 2023). Depression and anxiety are among the most consistently identified proximal risk factors for suicide and are also frequently comorbid with substance use disorders, particularly in the context of dual diagnosis (Franklin et al., 2017).

Based on this background, guided by the IMV model and supported by existing empirical evidence, the current study focused on the potential mediating role of alexithymia, depression, and anxiety in the association between childhood trauma and suicidal behavior among individuals with dual diagnosis. To our knowledge, no research has investigated whether alexithymia and mental health (i.e., depression and anxiety) serve as mechanisms linking childhood trauma and suicidal behavior among dual-diagnosed individuals. In this context, the current study aimed to examine the relationship between childhood trauma and suicidal behavior, as well as the mediating role of alexithymia, depression, and anxiety in a sample of participants in treatment for dual diagnosis (i.e., mental disorders and substance use).

2. Materials and Methods

2.1 Participants and Procedure

A total of 75 participants undergoing treatment for substance use with a concurrent dual diagnosis were recruited for the current study. All participants were receiving care at the Dual Diagnosis Unit of the Salamanca Health Complex (Unidad de Patología Dual del Complejo Asistencial de Salamanca), a specialized public service for individuals with co-occurring substance use and mental health disorders. The participants were, on average, 44.15 years old (SD = 12.15) and were predominantly male (82.7%). Their primary substance was alcohol (33.3%), followed by cocaine (28.0%) and cannabis (13.3%). Regarding concurrent psychological disorders, the most frequent were depressive disorders (35.6%), followed by personality disorders (32.9%) and anxiety disorders (16.4%). All psychological disorders were assessed by psychiatrists or a psychologist specialized in dual diagnosis through a clinical interview at baseline, following the diagnostic criteria (American Psychiatric Association, 2023). As shown in Table 1, most of the sample reported primary and secondary education. The participants were mostly unemployed, with early medical retirement being the second most frequent occupational status. Regarding their marital status, 60% of the sample reported being single.

This study was conducted following the principles of the Declaration of Helsinki. This study was conducted as an anonymous questionnaire survey; therefore, ethics approval was waived. All participants provided written informed consent.

2.2 Measures

Participants completed an ad-hoc questionnaire, which collected sociodemographic data (i.e., sex, age, monthly income, educational level, and marital status), as well as psychological disorders and substance use disorders. Additionally, the participants completed a set of validated questionnaires, which are outlined below.

The Childhood Trauma Questionnaire-Short Form (CTQ-SF; Bernstein et al., 2003, adapted to Spanish by Hernandez et al., 2013) was used for assessing childhood maltreatment. This questionnaire assesses five types of maltreatment: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. It comprises 28 items rated on a 5-point Likert-type scale (1 = never true; 5 = very often true). The questionnaire has excellent psychometric properties. Internal consistency ranges from 0.66 for emotional neglect to 0.94 for sexual abuse in the Spanish validation, whereas in the present study, Cronbach's alpha coefficients ranged from 0.60 for physical neglect to 0.92 for the sexual abuse dimension.

Table 1. Participants' sociodemographic characteristics.

	N = 75
Sex (male)	62 (82.7%)
Age[a]	44.15 (12.15)
Primary substance	
Alcohol	25 (33.3%)
Cocaine	21 (28.0%)
Cannabis	10 (13.3%)
Heroin	8 (10.7%)
Other[b]	11 (14.6%)
Primary psychological disorder	
Depressive disorders	26 (35.6%)
Personality disorders	24 (32.9%)
Anxiety disorders	12 (16.4%)
Psychotic disorders	5 (6.8%)
ADHD	4 (5.5%)
Bipolar disorders	2 (2.7%)
Educational level	
No studies	3 (4.0%)
Primary studies	29 (38.7%)
Secondary studies	20 (26.7%)
High school	7 (9.3%)
Vocational training	13 (17.3%)
University studies	3 (4.0%)
Occupational status	
Working	4 (5.3%)
Unemployed	46 (61.3%)
Student	1 (1.3%)
Retired	12 (16.0%)
Sick leave	12 (16.0%)
Marital status	
Single	45 (60.0%)
Married	10 (13.3%)
Legal partner	10 (13.3%)
Divorced	10 (13.3%)

Note. [a]mean(standard deviation). [b]Including benzodiazepines (n = 2), fentanyl (n = 2), amphetamines (n = 1), methadone (n = 3), buprenorphine (n = 1), caffeine (n = 1) and opioid analgesics (n = 1). Data were missing for the variable primary psychological disorder (N = 73). ADHD, attention deficit hyperactivity disorder; N, number of participants.

Table 2. Pearson's correlations and descriptive statistics for observed variables.

	1	2	3	4	5	6	7	8	9	10
1. Emotional abuse	-									
2. Physical abuse	0.742***	-								
3. Sexual abuse	0.498***	0.407***	-							
4. Emotional neglect	0.694***	0.608***	0.205	-						
5. Physical neglect	0.612***	0.626***	0.318**	0.627***	-					
6. Difficulty identifying feelings	0.220*	0.150	0.153	0.240*	0.163	-				
7. Difficulty describing feelings	0.185	0.224	0.106	0.275*	0.111	0.507***	-			
8. Depression	0.090	–0.042	0.136	0.107	0.012	0.548***	0.281*	-		
9. Anxiety	0.162	0.051	0.258*	0.029	0.062	0.412***	0.192	0.629***	-	
10. Suicidal behavior	0.197	0.178	0.319**	0.081	0.141	0.268*	0.389**	0.430***	0.492***	-
Mean	3.310	2.050	1.080	3.360	1.630	24.970	16.640	10.400	10.030	2.610
Standard deviation	4.960	3.680	3.280	4.170	2.600	8.520	6.840	6.390	5.630	2.070

Note. * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

The Toronto Alexithymia Scale-20 (TAS-20; Bagby et al., 1994, adapted to Spanish by Martínez Sánchez, 1996) measures alexithymia through 20 items. Items are rated on a 6-point Likert-type scale ranging from 0 (strongly disagree) to 5 (strongly agree) and are grouped into three dimensions: (1) difficulty identifying feelings; (2) difficulty describing feelings; and (3) externally-oriented thinking. The scale shows robust internal consistency and is highly reliable in the overall assessment (reliability was 0.77 in the original version and 0.72 for the Spanish adaptation). The current study only considers two dimensions, namely, difficulty Identifying feelings and difficulty describing feelings, whose reliability was 0.79 and 0.74, respectively.

The Symptoms Assessment-45 Questionnaire (SA-45; Davison et al., 1997; adapted to Spanish by Sandín et al., 2008) is the short version of the SCL-90, maintaining the same dimensions and psychometric properties as the extended version. It comprises a total of 45 items rated on a 5-point Likert scale ranging from 0 (no symptom-related distress) to 4 (maximum distress). The questionnaire assesses 45 symptoms grouped into a total of nine dimensions: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. In this study, only the Depression and Anxiety scales were used, composed of five items each. In the current sample, Cronbach's alpha was 0.87 for depression and 0.86 for anxiety.

The Paykel Suicide Scale (PSS; Paykel et al., 1974, adapted to Spanish by Fonseca-Pedrero et al., 2018) is a self-report instrument designed for assessing suicidal ideation and behaviors within the past year. It comprises five items with a dichotomous response format (Yes/No). Hence, the total score ranges from 0 to 5. Higher scores indicate a higher frequency and severity of suicidal ideation. Further, the PSS shows adequate psychometric properties, as seen by its robust internal consistency ($\alpha = 0.930$) in the Spanish validation and the present study ($\alpha = 0.901$).

2.3 Data Analysis

Descriptive analyses and frequencies were conducted to examine the sociodemographic characteristics of participants and the main variables of the study. Additionally, bivariate Pearson correlations were calculated to test the relationships between the variables of interest (i.e., childhood trauma, alexithymia, depression, anxiety, and suicidal behavior).

Structural equation modeling was performed to examine the mediating effect of alexithymia and mental health (i.e., depression and anxiety) on the relationship between childhood trauma and suicidal behavior. The model fit parameters were estimated using the maximum likelihood estimation method with a multipronged approach. A chi-square test compared the model-implied covariance matrix to the sample matrix. Thus, a non-significant p-value indicates no differences between variances and, therefore, a good fit to the data. However, given the sensitivity of the chi-square test to sample sizes (Meade et al., 2008; Mooijaart and Satorra, 2009), we relied on several valid alternative fit indices to evaluate the model fit (Byrne, 2009; Schermelleh-Engel et al., 2003): (1) The Tucker-Lewis index (TLI), where values higher than 0.90 indicate adequate model fit; (2) the comparative fit index (CFI), where values over 0.90 suggest good model fit; and (3) the root mean square error of approximation (RMSEA), which evaluates the overall power and robustness of the model. RMSEA values <0.08 suggest adequate model fit (Kline, 2011). All coefficients reported are standardized (i.e., betha), and the confidence level was 95%. IBM SPSS (version 26.0; SPSS, Inc., Chicago, IL, USA) and AMOS (version 23; SPSS, Inc., Chicago, IL, USA) were used for the analyses.

3. Results

Regarding the descriptive statistics and correlations for the observed variables, Table 2 presents the means, standard deviations, and bivariate correlations. Generally, childhood trauma variables (i.e., emotional, physical, and

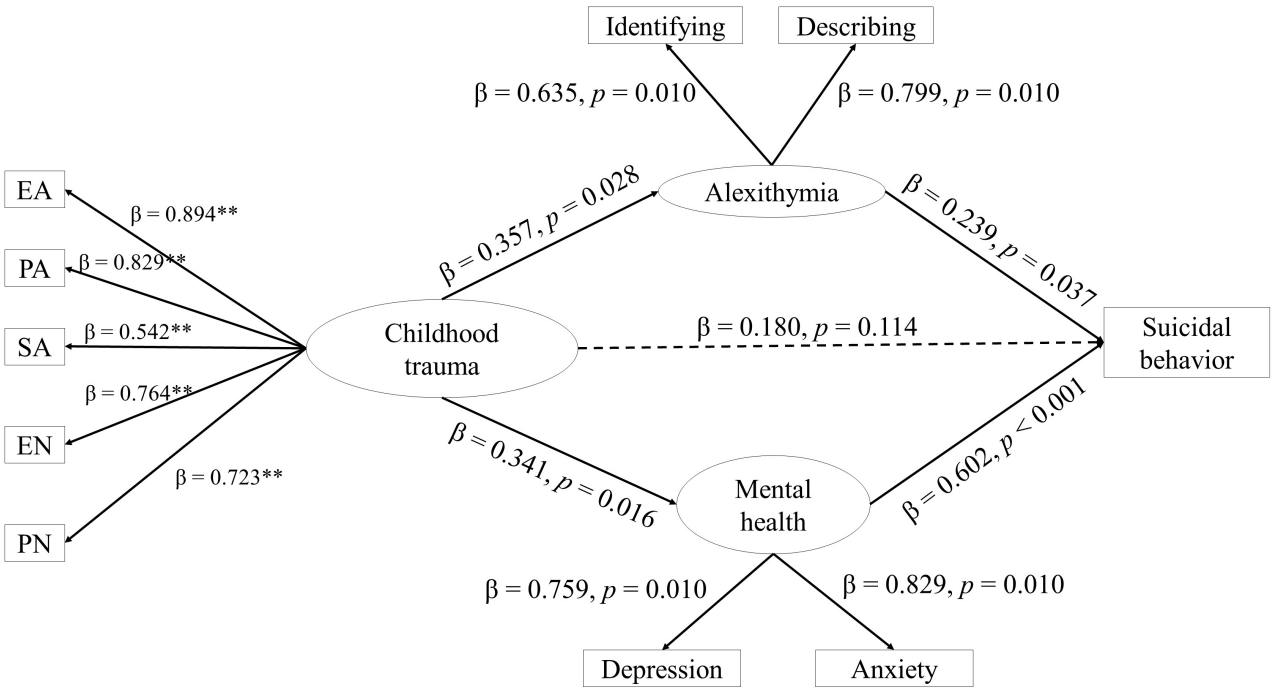

Fig. 1. Structural equation modeling. *Note.* ** $p \leq 0.01$. Solid lines indicate significant indirect effects at a 95% confidence interval. Dashed line indicates non-significant indirect effects at a 95% confidence interval. EA, emotional abuse; PA, physical abuse; SA, sexual abuse; EN, emotional neglect; PN, physical neglect; Identifying, The TAS-20 factor 'difficulty in identifying feelings'; Describing, The TAS-20 factor 'difficulty in describing feelings'.

sexual abuse, and emotional and physical neglect) exhibited significant positive correlations with each other (r $\geq$ 0.318), except for emotional neglect with sexual abuse (r = 0.205).

Concerning alexithymia, the dimension of difficulty identifying feelings was only associated with emotional neglect (r = 0.240), whereas the dimension of difficulty describing feelings was not significantly linked to all childhood. Both depression and anxiety were moderately related to alexithymia (r $\geq$ 0.281) and suicidal behavior (r $\geq$ 0.430). Finally, the relationship between suicidal behavior and sexual abuse is noteworthy (r = 0.319).

The structural equation model yielded adequate fit to data, evidenced by the fit indices [$\chi^2(34) = 54.238$, $p = 0.006$, $\chi^2/df = 1.750$; TLI = 0.839; CFI = 0.909; RMSEA = 0.045 (90% CI: 0.000, 0.102)].

The model shows that childhood trauma was significantly positively associated with alexithymia ($\beta = 0.357$, $p = 0.028$), while subsequently, alexithymia was associated with suicidal behavior ($\beta = 0.239$, $p = 0.037$). On the other hand, an increase in childhood trauma was significantly related to worse mental health ($\beta = 0.341$, $p = 0.016$), which was subsequently significantly related to more suicidal behaviors ($\beta = 0.602$, $p < 0.001$). The direct effect of childhood trauma on suicidal behavior was not significant ($\beta = 0.180$, $p = 0.114$). The squared multiple correlation for suicidal behavior was $R^2 = 0.463$, showing that the model explained 46.3% of the variance in suicidal behavior. Similarly, the R^2 for alexithymia was 0.192, and 0.021 for the mental health latent variable. The structural equation model is displayed in Fig. 1.

4. Discussion

The current study examines the mediating role of alexithymia and mental health in the relationship between childhood trauma and suicidal behavior. Findings of the current study indicate that both alexithymia and mental health problems mediate the relationship between childhood trauma and suicidal behavior among individuals with dual diagnosis.

In contrast to prior investigations (Farrugia et al., 2011; Lotzin et al., 2019; Vaszari et al., 2011), this study revealed a distinct pattern whereby suicidal behavior exhibited a significant correlation exclusively with sexual abuse. Notably, there was a lack of substantial association between suicidal behavior and other forms of childhood trauma, namely emotional/physical abuse and neglect. One feasible explanation for this discrepancy lies in our study's sample composition. The studies conducted by Vaszari et al. (2011) and Lotzin et al. (2019) both involved female participants exclusively. Furthermore, the study conducted by Farrugia et al. (2011) exclusively recruited individuals diagnosed with posttraumatic stress disorder, whereas our study encompassed a variety of psychological disorders.

Accordingly, this underscores the significance of conducting research comprising a diverse representation of both substance use and psychological disorders to establish robust conclusions.

Consistent with previous research (Kopera et al., 2020; Zdankiewicz-Ścigała and Ścigała, 2018, 2020), childhood trauma is associated with alexithymia, particularly the dimension of difficulties in describing feelings. Conversely, the dimension of difficulties in identifying feelings has shown a limited association with childhood trauma (i.e., only with sexual abuse). Prior studies have found that the correlation between childhood trauma and alexithymia is higher among people with psychological disorders and substance abuse (for a review, see De Berardis et al., 2017). Firstly, alexithymia may be a symptom of depression or anxiety (Lenzo et al., 2020; Lyvers et al., 2017; Sagar et al., 2021), and hence, a moderate correlation is found between the variables. On the other hand, one of the most widespread explanations is related to substance use as a way of coping with the distress caused by childhood trauma (Heggeness et al., 2020; Thorberg et al., 2011).

Findings indicate that childhood trauma is not directly related to suicidal behavior, but the two variables are related through the mediating effect of alexithymia and mental health problems. In other words, although no direct association was found between childhood trauma and suicidal behavior, the data support a significant indirect pathway via alexithymia and mental health symptoms, suggesting a potential underlying mechanism linking early adverse experiences with suicidal behavior. To our knowledge, no prior works have analyzed the mediating role of mental health and alexithymia among individuals with dual diagnosis. Notwithstanding, the effect of childhood trauma on mental health and other emotion-related variables is well-documented in longitudinal studies (McKay et al., 2021, 2022), as is the impact of mental health on suicidal behavior (Gili et al., 2019).

On the other hand, alexithymia could act as a mediator in the relationship between childhood trauma and suicidal behavior. Although no prior studies have analyzed the mediating role of alexithymia in individuals with dual diagnosis, this relationship has been examined in adolescents with mental health problems (Li et al., 2023; Titelius et al., 2018), male prisoners (Zhang et al., 2021), or individuals with substance use disorders (Di Nicola et al., 2024). Similarly, emotion regulation, a construct closely linked to alexithymia (Preece et al., 2023), has been studied as a mediator in general population (Laghaei et al., 2023; Turton et al., 2022) and psychiatrically hospitalized adolescents (Poon et al., 2023).

These results confirm previous evidence of the importance of emotional variables (e.g., alexithymia, emotion regulation) in understanding suicidal behavior (Iskric et al., 2020; Xie et al., 2021). Given the difficulties in identifying and describing feelings, this population may consume substances and engage in self-harm behaviors as a coping strategy for psychological distress (Frei et al., 2021; Heggeness et al., 2020; Rasmussen et al., 2016; Thorberg et al., 2011). Treatment has been shown to effectively modify alexithymia, leading to significant clinical benefits (Lukas et al., 2019; Norman et al., 2019; Salles et al., 2023). For all these reasons, it is crucial to incorporate psychological interventions based on alexithymia, that is, identifying and describing emotional states (Nunes da Silva, 2021). However, to our knowledge, no studies have addressed this issue in individuals with dual diagnosis. Therefore, these outcomes emphasize the need to conduct research among this population.

The findings here should be interpreted in the light of several limitations. First, the relatively small sample size may have led to insufficient statistical power to detect significant differences and to include potential confounding factors. However, it should be noted that this is a clinical population under active treatment with specific clinical characteristics. Regarding the sample, we note that we included mainly males, and substance use disorders and psychological diagnoses were highly heterogeneous. Hence, the interpretation of the results should be done with caution. Another limitation concerns the unbalanced sex distribution in the sample, which consisted predominantly of men. This limits the generalizability of the findings, as previous research suggests that men and women may differ in emotional processing, coping strategies, and the expression of suicidal behavior (Estévez et al., 2024; Miranda-Mendizabal et al., 2019). Therefore, we could not examine whether the model differed between men and women.

Limitations

Further, a cross-sectional design comes with several limitations that impact the interpretation of findings. Notably, this design also lacks information on the temporal sequence of events, preventing the establishment of causal relationships. In this line, it is prone to reverse causality, making it unclear whether one variable causes another or vice versa. Additionally, cross-sectional studies are susceptible to confounding variables, which can distort relationships between variables. Consequently, we encourage future studies to analyze the relationship between these variables with a prospective design. Another potential limitation of the study is that the TLI did not reach the recommended threshold of 0.90. This may reflect the complexity of the model, which included several mediating variables. Still, future studies should consider testing simplified versions of the model to further examine these relationships. Finally, concerning the questionnaires, the variables were based on self-reported questionnaires, and some of them were very extensive, so the information collected may have been biased. In addition, although most subscales showed good internal consistency, one presented a lower reliability ($\alpha = 0.60$), but it was retained due to its significant loading

on the latent construct and the SEM's capacity to handle measurement error.

While the current findings highlight key psychological mechanisms, it is important to consider that other underlying factors may also contribute to the observed associations (see Franklin et al., 2017). For instance, genetic vulnerability and neurobiological mechanisms may play a role in the development of both alexithymia and mental health problems in individuals exposed to childhood trauma. Future research should explore the interplay between biological, psychological, and environmental factors to better understand the complex pathways leading to suicidal behavior.

5. Conclusions

In conclusion, findings confirm and extend previous evidence showing the relationship between childhood trauma, alexithymia, mental health, and suicidal behavior among individuals with dual diagnosis. These results may be of scientific and clinical significance, given that they could help elucidate potential mechanisms underlying suicidal behavior in this population. From a clinical perspective, these findings emphasize the importance of early assessment of childhood trauma and alexithymia in patients with dual diagnosis, as these factors may inform suicide risk evaluation and treatment planning. Targeting alexithymia in therapy (e.g., emotional awareness, emotion labeling, and expression) may be particularly beneficial in improving emotion-regulation skills and reducing maladaptive coping strategies such as substance use or suicidal behavior. Moreover, integrating trauma-informed care and emotion-focused interventions into dual-diagnosis treatment programs may enhance outcomes, especially among those with a history of early adversity.

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Author Contributions

AE: conceptualization, supervision. GA-D: conceptualization, formal analysis, methodology. LM: conceptualization, supervision. CL-A: adquisition of data, supervision. AIA-N: adquisition data, supervision. All authors contributed to critical revision of the manuscript for important intellectual content. All authors read and approved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

This study was conducted following the principles of the Declaration of Helsinki. This study was conducted as an anonymous questionnaire survey; therefore, ethics approval was waived. All participants provided written informed consent.

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Conflict of Interest

The authors declare no conflict of interest.

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