



The mediating role of hopelessness and emotional dysregulation on the relationship between invalidating environments in childhood and non-suicidal self-injury in adolescents

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Título: El papel mediador de la desesperanza y la desregulación emocional en la relación entre los ambientes invalidantes en la infancia y las autolesiones no suicidas en adolescentes.

Resumen: Las autolesiones no suicidas (ANS) abarcan cualquier daño autoinfligido en la superficie del cuerpo sin intención suicida. Los principales factores de riesgo incluyen los entornos invalidantes durante la infancia, la desesperanza y la desregulación emocional, que son las variables principales estudiadas en este trabajo. El objetivo de este artículo es analizar si existe una interacción entre estas variables y cómo se relacionan con la aparición de las ANS en adolescentes. La muestra estuvo compuesta por un total de 1733 estudiantes de entre 12 y 19 años (media de edad 15.76, $DT = 1.77$; $n = 809$, 46.7% hombres, $n = 924$, 53.3%, mujeres). Se calcularon estadísticos descriptivos para la muestra y las correlaciones entre las diferentes variables evaluadas. Se analizaron dos modelos de mediación, el primero con los ambientes invalidantes como variable indirecta y las ANS como variable directa en ambos casos. La desesperanza fue la variable mediadora en un modelo y la desregulación emocional en el otro. Los resultados mostraron que el 24.6% de los adolescentes se habían autolesionado al menos una vez en su vida y el 12.7% había recurrido a métodos más graves. Todas las variables analizadas correlacionaron de manera positiva y significativa con las ANS, excepto la subescala de atención/desatención de la desregulación emocional. En ambos modelos de mediación tanto la desesperanza como la desregulación emocional tuvieron un efecto indirecto en la relación entre los ambientes invalidantes por parte del padre y de la madre y la presencia de ANS en la adolescencia. En conclusión, la desesperanza y la desregulación emocional aumentan el riesgo de involucrarse en conductas autolesivas durante la adolescencia cuando se han experimentado situaciones familiares invalidantes durante la infancia.

Palabras clave: Autolesiones no suicidas. Ambientes invalidantes. Desesperanza. Desregulación emocional. Factores de riesgo.

Abstract: Non-suicidal self-injury (NSSI) encompasses any self-inflicted harm to the body surface without suicidal intent. The main risk factors include invalidating environments during childhood, hopelessness, and emotional dysregulation, which are the primary variables studied in this work. The aim of this paper is to analyze whether there is an interaction between these variables and how they relate to the onset of NSSI in adolescents. A total of 1733 students aged 12 to 19 composed the sample (mean age of 15.76, $SD = 1.77$; $n = 809$, 46.7% male and $n = 924$, 53.3%, female). Descriptive statistics were calculated for the sample, along with the correlations between the different measured variables. Two mediation models were analyzed, with invalidating environments as the indirect variable and NSSI as the direct variable in both cases. Hopelessness was the mediating variable in one model and emotional dysregulation in the other. Results show that 24.6% of adolescents have self-injured at least once in their lifetime, and 12.7% have resorted to more severe methods. All analyzed variables positively and significantly correlate with NSSI, except for the attention/disattention subscale of emotional dysregulation. In both mediation models, both hopelessness and emotional dysregulation have an indirect effect on the relationship between invalidating environments by both father and mother and the onset of NSSI during adolescence. In conclusion, hopelessness and emotional dysregulation increase the risk of engaging in self-injurious behaviors during adolescence when invalidating situations have been experienced during childhood.

Keywords: Non-suicidal. Self-Injury. Invalidating Environments. Hopelessness. Emotional Dysregulation. Risk Factors.

Introduction

Non-suicidal self-injuries (NSSI) encompasses any self-inflicted harm to the body surface without suicidal intent. According to Gandhi et al. (2018), the onset age ranges from 12 to 14 years, with adolescence being a critical period for developing and maintaining this behavior due to the significant emotional instability associated with this life stage (Plener et al., 2015). Recent meta-analyses indicate that non-suicidal self-injury (NSSI) is highly prevalent during adolescence, with lifetime prevalence rates in community samples ranging between 16% and 22%. Pooled global estimates suggest prevalence rates of approximately 17–22%, with consistently higher rates among female adolescents, particularly in North America and Europe (Farkas et al., 2024; Moloney

et al., 2024; Xiao et al., 2022). In Spain, community-based studies have consistently reported high rates of NSSI among adolescents, with prevalence estimates broadly aligned with international data. Early evidence showed that more than half of adolescents engaged in NSSI in the previous year, although more severe methods were reported by a smaller proportion of participants (32.2%), mainly involving cutting, burning, or tearing the skin (Calvete et al., 2015). More recent studies indicate that approximately one quarter of Spanish adolescents' report lifetime NSSI, with severe methods such as cutting accounting for around 12–13% of cases, while milder behaviors (e.g., scratching or tearing the skin, hitting oneself) are more frequent (Pérez et al., 2021). In line with these findings, a large community-based study conducted before and after the COVID-19 pandemic reported lifetime NSSI prevalence rates of 24.9% in the pre-pandemic period and 19.4% in the post-pandemic period, with cutting, hitting oneself, and scratching remaining the most commonly reported methods, alongside an increase in the number of

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methods and functions endorsed despite relatively stable prevalence rates over time (Sanz-Sendra et al., 2024). Together, these findings highlight the persistence and clinical relevance of NSSI as a significant public health concern among Spanish adolescents. Regarding gender differences in NSSI, recent meta-analytic evidence indicates a higher prevalence among female adolescents, particularly in community samples from North America and Europe, whereas more comparable prevalence rates between males and females are observed in Asian samples (Farkas et al., 2024; Moloney et al., 2024). In addition to prevalence differences, recent large-scale reviews report sex-related variation in NSSI characteristics, with females more frequently engaging in methods involving tissue damage and blood, and males more often reporting impact-related behaviors, although these patterns may vary across regions and cultural contexts (Xiao et al., 2022).

Regarding the functionality of NSSI, Klonsky et al. (2015) reported that the presence of NSSI is generally connected to intrapersonal and/or social functions. In the former case, the objective is to regulate or produce changes in the internal state, either by decreasing or eliminating negative emotions, or by generating positive or desirable affective states. On the other hand, in the case of interpersonal or social functions, NSSI is used to avoid unwanted social situations, such as avoiding punishment or an argument, or to obtain a desired social response, such as seeking attention or reflecting desperation (Nock & Prinstein, 2004). Contemporary reviews and large-scale empirical studies indicate that adolescents often endorse multiple functions simultaneously, with emotion regulation and distress management emerging as the most frequently reported motives, while interpersonal functions appear as secondary but clinically relevant contributors to the maintenance of NSSI (Gallego et al., 2019; Sanz-Sendra et al., 2024; Xiao et al., 2022).

Within developmental models of NSSI, early exposure to invalidating environments has been identified as a key risk factor, particularly when such environments are characterized by chronic invalidation from primary caregivers (Linehan, 1993). Specifically, Yates (2004) proposed that parental deprivation or inadequate caregiving environments and resulting insecure attachment affect the development of adaptive regulation strategies in early stages and may lead children to exhibit inadequate regulation skills to cope with distress, such as NSSI. Recent research indicates that exposure to invalidating or emotionally unsupportive caregiving environments during childhood and adolescence is associated with increased vulnerability to NSSI, particularly through deficits in emotional awareness, emotional clarity, and limited access to adaptive emotion regulation strategies (Marre-ro et al., 2023; Pérez et al., 2020; Sun et al., 2025). In line with this evidence, contemporary meta-analyses and systematic reviews consistently identify emotion dysregulation as a central psychological mechanism underlying NSSI in adolescents, closely linked to difficulties in impulse control and the management of intense negative affect (Wolff et al., 2019).

Moreover, adolescents who engage in NSSI report higher exposure to family contexts characterized by criticism, emotional neglect, and adverse interpersonal experiences, supporting the role of invalidating environments as a key developmental risk factor. Within this framework, recent studies suggest that NSSI frequently serves an intrapersonal regulatory function, providing short-term relief from emotional distress in the absence of more adaptive means of emotional expression (Sun et al., 2025; Tatnell et al., 2017).

Hopelessness, characterized by rigid and negative expectations about the future and the inability to change upcoming outcomes (Abramson et al., 1989; Beck et al., 1974), is one of the strongest risk factors for predicting NSSI in adolescents. More specifically, the meta-analysis conducted by Fox et al. (2015) concluded that hopelessness is among the most robust longitudinal predictors of NSSI. In line with this evidence, recent longitudinal research in community adolescents has shown that NSSI prospectively predicts increases in hopelessness over time, while hopelessness contributes indirectly to the maintenance of NSSI through its association with depressive symptoms and emotional dysregulation, highlighting a bidirectional and dynamic relationship between these variables during adolescence (Faura-García et al., 2023).

In addition to those mentioned, other risk factors that contribute to NSSI include previous engagement in NSSI, symptoms characteristic of cluster B personality, previous suicidal thoughts and behaviors, exposure to NSSI through peers, or depressive symptoms (Fox et al., 2015). However, in this study, we will focus on the role of invalidating environments during childhood, hopelessness, and emotional dysregulation and their relationship with NSSI. There are few studies that analyze the relationship and interaction between these three variables and their relationship with NSSI. To date, although a growing body of international research has examined the links between invalidating caregiving environments, emotion dysregulation, and NSSI, empirical studies simultaneously integrating specific dimensions of parental invalidation (e.g., maternal and paternal maltreatment or emotional misalignment), emotion regulation processes, and NSSI in adolescent populations remain relatively scarce. Some evidence suggests that parental maltreatment and perceived emotional invalidation may exert indirect effects on NSSI through deficits in emotional clarity (e.g., Guérin-Marion et al., 2020). However, this line of research is still limited, particularly regarding the joint contribution of maternal and paternal invalidation. In the Spanish context, despite recent advances in the study of NSSI, emotion dysregulation, and related psychological vulnerabilities, there is still a lack of integrative models that simultaneously examine invalidating family environments, emotion regulation processes, and NSSI in adolescent samples.

Therefore, this study aims, first, to explore the relationship between NSSI and invalidating environments by mother and father, emotional dysregulation, and hopelessness. Second, to analyze to what extent growing up in an invalidating

environment predicts NSSI in adolescents, and whether emotional dysregulation and hopelessness act as mediators in this prediction. Considering the aforementioned literature and the objectives of this study, we expect, on the one hand, a positive and significant relationship between the study variables and, on the other hand, growing up in an invalidating environment to positively predict the onset of NSSI during adolescence, and furthermore, both emotional dysregulation and hopelessness to have a mediating effect on this prediction.

Materials and Methods

Participants

A total of 1733 secondary school ($n = 1070$), higher secondary ($n = 510$), and first-year university ($n = 148$) students constitute the sample for this study. The age range varied from 12 to 19 years, with a mean age of 15.76 ($SD = 1.77$). Regarding gender, 809 (46.7%) participants were male and 924 (53.3%) are female.

The study's inclusion criteria required participants to be aged 12 to 19 years old and to have signed the informed consent. For minors, their parents or legal guardians had to sign the consent. Therefore, the exclusion criterion was that either the students and/or their legal guardians did not agree to participate in the study. All participants received appropriate instructions to complete the assessment protocol in their classes, and all of them understood Spanish. The recruitment of the participant sample was done between September 2016 and June 2018.

Assessments and measures

Sociodemographic Information: Participants were asked to indicate their age, gender (Male/Female), and level of education (Secondary, Higher secondary, or First year of University).

Inventory of Statements about Self-Injury (ISAS-I and II; Klonksy & Glenn, 2009): For this study, we used the validated Spanish version (Pérez et al., 2020). The first part of the inventory (ISAS-I) assesses the lifetime frequency of 12 different NSSI behaviors intentionally performed without suicidal intent. These behaviors include hitting oneself, biting, burning, cutting, scratching, picking wounds, needle-sticking, pinching, hair-pulling, rubbing skin against rough surfaces, excessive scratching, and ingestion of chemicals. Adolescents are asked to report how many times they have engaged in self-injury throughout their lives. NSSI responses on the ISAS-I scale were rescaled into ordinal (Likert-type) categories: "no NSSI present at all"; between 1 and 4 times; between 5-50 times; 51-100 times; and more than 100 times. Five Likert categories were chosen for clinical and methodological purposes: to capture two categories under the DSM 5 clinical category that included at least 5 NSSI behaviours (no NSSI, and 1-4), and to capture three categories that grouped

NSSI with progressively higher levels of frequency, based on the clinical consensus of the research team members. In addition, we selected a 5-category option for reasons of reliability and validity (Nunnally, 1967; Preston & Colman, 2000).

The second part of the ISAS (ISAS-II) assesses 13 interpersonal and intrapersonal functions of NSSI. The evaluated interpersonal functions include Autonomy, Interpersonal Limits, Interpersonal Influence, Peer Attachment, Revenge, Self-Care, Sensation Seeking, and Resistance. The intrapersonal functions include Affect Regulation, Anti-Dissociation, Anti-Suicide, Distress Regulation, and Self-Punishment. Both intrapersonal ($\alpha = .94$) and interpersonal ($\alpha = .97$) functions demonstrated adequate consistency in this sample.

Invalidating Childhood Environment Scale (ICES; Mountford et al., 2007): This self-report instrument retrospectively evaluates exposure to invalidating environments during childhood. It consists of 18 Likert-type items (1-5), with 14 measuring specific invalidating behaviors of both parents. Additionally, it contains 4 items related to perception of family structure and style, including 1 validator item and 3 invalidation items. In our sample, adequate Cronbach's alphas were obtained for both the fathers' scale ($\alpha = .87$) and mothers' scale ($\alpha = .86$).

Beck Hopelessness Scale (BHS; Beck et al., 1974): This self-administered scale consists of 20 true/false items assessing negative attitudes about the future. Eleven items present pessimistic statements about the future, while nine items present optimistic statements. Scores range from 0 to 20, with higher scores indicating greater hopelessness. This scale has been validated in the Spanish population. Internal consistency in our sample was adequate for the total score ($\alpha = .91$).

Difficulties in Emotional Regulation Scale (DERS; Gratz & Roemer, 2004): For this study, we used the validated Spanish version (Hervás & Jódar, 2008). This scale evaluates various characteristics of emotional regulation and comprises 28 Likert-type items with five response levels. It includes five subscales: Lack of emotional control, Non-acceptance of emotions, Emotional interference in life, Emotional inattention, and Emotional confusion. In the present study, the total scale showed excellent internal consistency ($\alpha = .89$). Cronbach's alpha for the subscales was adequate: Inattention ($\alpha = .81$), Lack of control ($\alpha = .87$), Confusion ($\alpha = .71$), Non-acceptance ($\alpha = 0.83$), and Interference ($\alpha = 0.87$).

Procedure and Design

This study was approved by the ethics committee of the Universidad Católica de Valencia San Vicente Mártir (Valencia, Spain). The students comprising the sample were recruited through announcements in classrooms and letters sent to families by the school's administration. Both students and their families received specific information about the research objectives and the type of assessment that would be administered to the students. Participants signed informed

consent forms in the classroom, and in the case of minors, parents, and/or legal guardians also signed informed consent forms. Participation in this study was completely voluntary and anonymous, with no compensation provided. Additionally, privacy and confidentiality regarding parents/guardians were ensured to not interfere with the reliability of the volunteers' responses. This study followed a cross-sectional design, and all adolescents were assessed at a single time point.

Prior to the main data collection, a pilot study was conducted with two independent adolescents' group to assess the clarity and comprehension of the assessment protocol, with particular emphasis on the understanding of items related to NSSI. This pilot phase allowed the identification of minor comprehension difficulties, especially regarding the distinction between NSSI and other forms of harm, leading to small wording adjustments where necessary. In addition, the pilot study examined potential differences in response patterns according to the device used to complete the questionnaires (mobile phone vs. computer), with no relevant differences observed in response coherence or data quality across administration formats.

Finally, given the anonymous nature of the assessment, individual participants could not be directly identified. However, based on general contextual information provided in the questionnaires (e.g., educational level and classroom group), it was possible to identify the classroom context in which indicators of NSSI were detected. In these cases, general information and guidance were provided to school tutors and counsellors, so that appropriate preventive or supportive actions could be implemented at the group level, in accordance with ethical approval.

Statistical Analyses

First, descriptive statistics were calculated to explore the sociodemographic and clinical variables of the sample, as well as the correlations between the scales used in this study to examine their relationships. Prior to conducting mediation analyses, preliminary suitability criteria were examined, including the presence of significant associations among predictors, mediators, and outcome variables, as well as multicollinearity diagnostics, which showed acceptable values.

Specifically, multicollinearity diagnostics indicated acceptable values for all predictors (tolerance range = .30–.78; VIF range = 1.28–3.30). Given the large sample size, statistical power was adequate to test indirect effects. In addition, mediation analyses were conducted using bootstrapping procedures, which are robust to deviations from normality.

Second, two mediation analyses were conducted using path analysis in the JASP program to evaluate whether emotional dysregulation and hopelessness mediate the relationship between invalidating environments by mother and father and NSSI in adolescents. Given the cross-sectional nature of the study, the mediation models were tested as theoretically informed statistical models aimed at examining indirect associations among variables rather than establishing causal relationships. The interpretation of these models is therefore framed in terms of statistical mediation and theoretical consistency, acknowledging that longitudinal designs are required to confirm the temporal ordering and directionality of the observed associations. Statistical analyses were performed using the SPSS statistical package (version 28 for Windows) and the JASP open-source statistical package (version 17.1 for Windows).

Results

Descriptive Analysis

The sample comprised 1,733 students aged between 12 and 19 years ($M = 15.76$, $SD = 1.77$), with a balanced gender distribution (53.3% female). Almost one quarter of the participants (24.6%) reported having engaged in non-suicidal self-injury at least once in their lifetime. Adolescents who reported lifetime NSSI were younger on average ($M = 14.85$, $SD = 1.67$). No statistically significant gender differences were found either in NSSI frequency or in the presence versus absence of NSSI. Regarding hopelessness, most participants reported normal or mild levels. A detailed overview of sociodemographic and clinical characteristics is presented in Table 1, while descriptive statistics of the study variables (means, standard deviations, and ranges) are provided in Table 2.

Table 1*Sociodemographic and clinical characteristics of the sample*

Sociodemographic variables	Total sample (N = 1733)	Clinical variables	Adolescents with lifetime NSSI (n = 431)
Age (years)		Lifetime NSSI, n (%)	
Range	12–19	At least once	431 (24.6%)
Mean (SD)	15.76 (1.77)	≥ 20 times	43 (2.5%)
		≥ 30 times	17 (1.0%)
Gender, n (%)		Up to 100 times	11 (0.6%)
Male	809 (46.7%)	Functions of NSSI, n (%)	
Female	924 (53.3%)	Intrapersonal	99 (46.7%)
		Interpersonal	49 (29.7%)
Educational level, n (%)		Both functions	64 (28.2%)
Secondary school	1,070 (61.7%)	Age of NSSI group (years)	
Higher secondary school	510 (29.4%)	Mean (SD)	14.85 (1.67)
First-year university	148 (8.5%)	Hopelessness level, n (%)	
		Normal	1,901 (63.5%)
		Mild	451 (26.0%)
		Moderate	146 (8.4%)
		Severe	31 (1.8%)

Note. Percentages for NSSI functions are calculated over participants reporting lifetime NSSI; some adolescents did not specify their reasons for self-injury

Table 2*Descriptive statistics of study variables*

Variable	M	SD	Min	Max
NSSI (lifetime frequency)	1.82	4.20	0	34
ICES Mother	25.71	8.50	14	70
ICES Father	26.22	9.70	14	70
Hopelessness (HS total)	3.63	3.40	0	20
Emotional dysregulation (DERS total)	66.11	16.60	28	140
Attention / Inattention (DERS)	13.32	3.84	5	25
Regulation / Dyscontrol (DERS)	18.08	7.29	6	30
Clarity / Confusion (DERS)	9.56	2.32	5	20
Acceptance / Rejection (DERS)	13.77	6.29	6	30
Functioning / Interference (DERS)	11.35	4.38	5	25
ISAS Intrapersonal functions	0.23	0.87	0	6
ISAS Interpersonal functions	0.09	0.39	0	6

Note. NSSI = Non-suicidal self-injury; ICES = Invalidating Childhood Environment Scale; BHS = Beck Hopelessness Scale; DERS = Difficulties in Emotion Regulation Scale; ISAS = Inventory of Statements about Self-Injury.

Correlations

Correlations between NSSI and the rest of the variables analyzed are presented in Table 3. The subscales of emotional dysregulation and the intra and interpersonal functions of NSSI were also considered. Positive and statistically significant correlations were observed between NSSI and all the analyzed variables: invalidating environments by mother (ICES mother $r = .18, p < .001$) and father (ICES father $r = .15, p < .001$), hopelessness (total HS $r = .35, p < .001$), emotional dysregulation (total DERS $r = .34, p < .001$), and its subscales regulation/uncontrol ($r = .32, p < .001$), clarity/confusion ($r = .18, p < .001$), acceptance/rejection ($r = .30, p < .001$), functioning/interference ($r = .24, p < .001$), except for the attention/disattention subscale ($r = -.022, p = .36$). It also correlated positively and statistically significantly with the intra and interpersonal functions of NSSI (Intrapersonal $r = .58, p < .001$; Interpersonal $r = .45, p < .001$).

Table 3*Correlations between Non-Suicidal Self-Injuries and psychological variables N = 1733*

	1	2	3	4	5	6	7	8	9	10	11	12
1 NSSI	---											
2 ICES mother	.18***	---										
3 ICES father	.15***	.62***	---									
4 HS Total	.35***	.31***	.31***	---								
5 DERS total	.34***	.28***	.26***	.45***	---							
6 Attention/Inattention	-.022	-.05	-.20***	-.20***	.11***	---						
7 Regulation/Dyscontrol	.32***	.27***	.25***	.46***	.88**	-.10***	---					
8 Clarity/Confusion	.18***	.22***	.18***	.29***	.55***	.09***	.38***	---				
9 Acceptance/Rejection	.30***	.25***	.24***	.43***	.82**	-.15***	.64***	.37***	---			
10 Functioning/Interference	.24***	.20***	.21***	.37***	.76**	-.11***	.64***	.31***	.53***	---		
11 ISAS Intrapersonal	.58***	.14***	.17***	.35***	.34***	-.06*	.34***	.16***	.32***	.24***	---	
12 ISAS Interpersonal	.45***	.13***	.11***	.23***	.30***	-.02	.31***	.16***	.26***	.19***	.81**	---

Note. ***The correlation is significant at the 0.001 (two-tailed); ** The correlation is significant at the 0.01 (two-tailed); * The correlation is significant at the 0.05 (two-tailed)

Mediation Analysis

Two different mediation models were analyzed, with emotional dysregulation as the mediating variable in the first model and hopelessness in the second. In both cases, invalidating environments by mother and father were the independent variables, and the NSSI reported by adolescents was the dependent variable.

Model 1: Emotional Dysregulation as a Mediating Variable

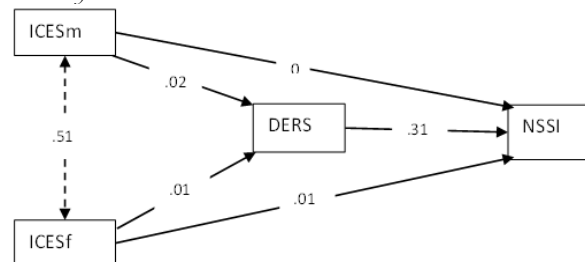
Total effects showed that invalidating environments by the father were positively and significantly associated with NSSI. Indirect effects indicated that emotional dysregulation significantly mediated the association between invalidating environments by both mother and father and NSSI. The direct effect of invalidating environments by the father on NSSI remained significant after inclusion of the mediator (Table 2). The model explained 12% of the variance in NSSI and 9% of the variance in emotional dysregulation (Table 4, Figure 1).

Table 4
Mediation analysis model 1

	Estimate	Std.error	z-value	p	95% confidence interval	
					Lower	Upper
Total effects						
ICES mother→NSSI	.006	.004	1.29	.20	-.003	.02
ICES father→NSSI	.02	.004	4.01	.000	.007	.03
Indirect effects						
ICES mother→DERS→NSSI	.007	.001	4.82	.000	.004	.01
ICES father→DERS→NSSI	.004	.001	3.60	.000	.002	.007
Direct effects						
ICES mother→NSSI	-.002	.004	-.35	.72	-.01	.007
ICES father→NSSI	.01	.004	2.98	.003	.003	.02

Note. NSSI = Non-Suicidal Self-injuries; ICES = Invalidating Childhood Environment Scale; DERS = Difficulties in Emotional Regulation Scale.

Figure 1
Path analysis model 1



Note. ICESm (ICES mother); ICESf (ICES father); DERS (difficulties in emotional regulation); NSSI (non-suicidal self-injuries)

Model 2: Hopelessness as a Mediating Variable

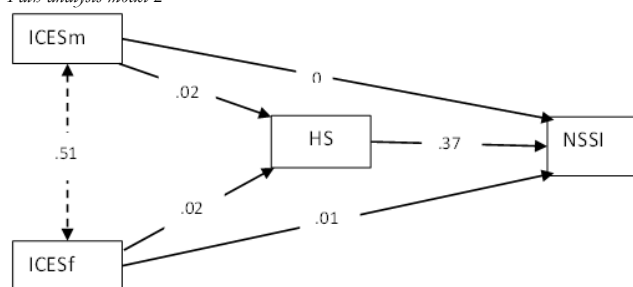
Total effects showed that invalidating environments by the father were positively and significantly associated with NSSI. Indirect effects indicated that hopelessness significantly mediated the association between invalidating environments by both mother and father and NSSI. The direct effect of invalidating environments by the father on NSSI remained significant after inclusion of the mediator (Table 3). The model explained 16% of the variance in NSSI and 12% of the variance in hopelessness (Table 5, Figure 2).

Table 5
Mediation analysis model 2

	Estimate	Std.error	z-value	p	95% confidence interval	
					Lower	Upper
Total effects						
ICES mother→NSSI	.005	.004	1.29	.20	-.003	.01
ICES father→NSSI	.02	.004	4.01	.000	.007	.02
Indirect effects						
ICES mother→HS→NSSI	.008	.002	4.90	.000	.005	.01
ICES father→HS→NSSI	.007	.001	5.01	.000	.004	.01
Direct effects						
ICES mother→NSSI	-.003	.004	-.64	.22	-.01	.005
ICES father→NSSI	.008	.003	2.18	.03	.0008	.02

Note. NSSI = Non Suicidal Self-injuries; ICES = Invalidating Childhood Environment Scale; HS = Hopelessness Scale.

Figure 2
Path analysis model 2



Note. ICESm (ICES mother); ICESf (ICES father); HS (hopelessness); NSSI (non-suicidal self-injuries)

Discussion

The main objectives of this study were: (1) to analyze the relationship between NSSI and invalidating environments by mother and father, emotional dysregulation, and hopelessness; and (2) to explore to what extent growing up in an invalidating environment predicts NSSI in adolescence and whether emotional dysregulation and hopelessness act as mediators in this prediction. The results partially supported the initially hypothesized relationships.

Regarding the relationship between NSSI and the different variables under study, the results indicate a positive and statistically significant relationship with invalidating environments, emotional dysregulation, and hopelessness, as expected. These findings confirm previous literature, as all these variables are considered risk factors for the onset of NSSI during adolescence. Recent studies have highlighted the relationship between exposure to invalidating environments during childhood and a higher likelihood of engaging in NSSI during adolescence (Guérin-Marion et al., 2020).

Exposure to inadequate caregiving environments or even maltreatment fosters the development of insecure attachment and difficulty in developing adaptive regulation strategies at early ages, as well as a great difficulty in understanding one's emotions (Guérin-Marion et al., 2020; Marrero et al., 2023). In turn, emotional dysregulation or difficulty in understanding one's emotions is highly related to the onset of NSSI during adolescence (Pérez et al., 2020), as adolescents resort to NSSI as a mechanism to alleviate distress (Flores et al., 2018; Sun et al., 2025).

On the other hand, hopelessness is one of the risk factors that best predicts NSSI, with a strong correlation and predictive relationship (Fox et al., 2015; Steeg et al., 2016). Being hopeless, that is, having negative expectations about the future and feeling unable to do anything about it, is associated with depressive symptoms (Beck et al., 1974; Hamilton et al., 2015), and NSSI serves as a way to manage this distress, as previously mentioned. From these results, we can conclude that experiencing invalidating situations during childhood can clearly lead to difficulties in emotional regulation and a sense of hopelessness toward life, which are associated with the risk of engaging in NSSI during adolescence.

The results from the analyzed mediation models show that both invalidating environments by mother and father have an indirect, positive, and significant effect on the presence of NSSI during adolescence through emotional dysregulation, on the one hand, and hopelessness, on the other. This suggests that individuals exposed to a situation of maltreatment during childhood (in any of its aspects such as neglect, overprotection, or physical or emotional abuse, among others) are more vulnerable to NSSI, probably due, among other factors, to difficulties in understanding their emotions and a sense of hopelessness toward life. These results are partially consistent with those found by Guérin-Marion et al. (2020) and extend recent evidence highlighting emotion dysregulation as a key mediating mechanism linking adverse caregiving environments and NSSI during adolescence (Faura-García et al., 2023; Marrero et al., 2023). In Guérin-Marion et al. (2020) study, differences were observed when considering who was creating the invalidating environment and its impact on the presence of NSSI. A direct impact was observed between invalidating environments by the father and NSSI, while no such effect was observed when it was carried out by the mother. This pattern may be better understood in light of recent findings emphasizing the role of family functioning and emotional processes in NSSI. Specifically, Marrero et al. (2023) reported that NSSI was more strongly associated with low family satisfaction and poorer family functioning than other harmful behaviors, suggesting that relational dynamics within the family context may play a particularly relevant role in the emergence of NSSI. In addition, longitudinal evidence indicates that emotional dysregulation and hopelessness are dynamically intertwined with NSSI across adolescence, acting as proximal mechanisms that may amplify the impact of adverse family interactions over time (Faura-García et al., 2023). Previous studies have also found that invalidating environments by father had a stronger effect on NSSI in patients diagnosed with Borderline Personality Disorder (Pérez et al., 2020) or in patients with bulimic behaviors (Haslam et al., 2008), highlighting the need for exploring the fathers' roles, life experiences, and specific invalidating behaviors from fathers that could lead to such differences.

In the case of hopelessness as a mediating variable, the results follow the same line. Although previous studies have rarely examined hopelessness as a mediator between invalidating caregiving environments and NSSI, recent longitudinal research supports its role as a cognitive vulnerability associated with the maintenance of NSSI during adolescence (Faura-García et al., 2023). In this context, our findings contribute to the literature by suggesting that hopelessness may represent a relevant cognitive-affective mechanism linking parental relational styles and NSSI during adolescence, highlighting the association between negative future-oriented expectations and self-injurious behavior.

Beyond confirming previous findings, the present study adds to the literature by highlighting the differential role of maternal and paternal invalidation in the development of

NSSI during adolescence. Specifically, our results suggest that paternal invalidation may exert a more direct and persistent influence on NSSI, even after accounting for emotional dysregulation and hopelessness. This pattern may reflect differences in parental roles, emotional availability, or socialization processes traditionally associated with fathers, which could make paternal invalidation particularly salient during adolescence. From a developmental perspective, these findings underscore the importance of considering not only the presence of invalidating environments, but also their source, when examining pathways to NSSI.

From a theoretical perspective, several mechanisms may help explain the stronger predictive role observed for paternal invalidation in some cases. Fathers have traditionally been associated with functions related to autonomy support, boundary setting, and social validation during adolescence. Consequently, paternal invalidation may be experienced as particularly disconfirming of adolescents' emerging identity and sense of competence, potentially intensifying feelings of rejection or inadequacy. In addition, lower emotional expressiveness or availability often attributed to paternal roles may reduce opportunities for emotional validation, making invalidating interactions more salient and impactful during this developmental stage. This interpretation is consistent with clinical evidence showing that invalidating environments created by fathers are particularly associated with NSSI in patients with Borderline Personality Disorder, even when emotional dysregulation and trauma-related variables are considered (Pérez et al., 2020). Although derived from a clinical context, these findings lend support to the plausibility of a differential paternal effect and provide a useful framework for interpreting the patterns observed in the present community-based adolescent sample. Nevertheless, these hypotheses warrant further empirical examination, particularly through longitudinal and multi-informant designs.

Despite the high prevalence of NSSI in the general population, most empirically supported interventions are primarily situated within clinical settings (Mollà et al., 2015). Although a wide range of therapeutic approaches has been developed to reduce NSSI during adolescence, preventive strategies remain comparatively underexplored. From a prevention perspective, early emotional education in school contexts, together with the promotion of adaptive problem-solving alternatives to NSSI, may be particularly relevant. In addition, family-based initiatives aimed at enhancing emotional validation, assertive communication, and positive relational dynamics could help mitigate the impact of invalidating environments. Such approaches may provide adolescents with more functional tools to regulate emotions and manage hopelessness. Evidence supports cognitive-behavioral interventions and dialectical behavior therapy as promising frameworks for both prevention and intervention (Mollà et al., 2015; Muehlenkamp, 2006).

Clinical implications and applications

The present findings have relevant implications for both prevention and clinical practice. The mediating roles of emotional dysregulation and hopelessness suggest that interventions aimed at reducing NSSI in adolescents should not be limited to addressing the behavior itself but should also target underlying emotional and cognitive vulnerabilities associated with invalidating caregiving environments. From a preventive perspective, programs implemented in school and community settings may benefit from incorporating emotional education components focused on emotional awareness, emotional clarity, and adaptive regulation strategies, particularly for adolescents exposed to invalidating family interactions.

In clinical contexts, the results highlight the importance of assessing hopelessness and emotion regulation difficulties when working with adolescents who engage in NSSI, even in the absence of severe psychopathology. Interventions that include cognitive strategies to address negative future-oriented expectations, alongside skills-based approaches to improve emotional regulation, may be especially relevant for this population. In addition, given the differential role observed for paternal invalidation, family-based interventions should consider involving fathers and addressing specific invalidating interaction patterns within the family system. Overall, these findings support integrative intervention approaches that combine individual emotion regulation training with family-focused strategies aimed at promoting emotional validation and supportive caregiving environments.

Limitations and Future Considerations

The results obtained in this study provide new information to the existing literature on how hopelessness and emotional dysregulation strengthen the impact of invalidating environments on the presence of NSSI during adolescence. However, it has several limitations to consider. First, this is a cross-sectional study with a non-randomized sample, so causality relationships between variables cannot be established. Longitudinal studies could help elucidate the directionality of the observed results. On the other hand, our sample consisted of 1733 adolescents aged 12 to 19, so the results cannot be generalized to other population groups or clinical samples. Future studies should take into account different sociodemographic variables to increase the heterogeneity of the sample and expand the reference population. Likewise, it should be noted that the variables were assessed based on self-reported responses, so the possible effects of social desirability in the responses should be considered. From a methodological perspective, one subscale of the DERS (emotional confusion) showed only moderate internal consistency; therefore, results specifically related to this dimension should be interpreted with caution, despite the adequate reliability observed for the total scale and the remaining subscales.

Building on these limitations, future research would benefit from incorporating longitudinal designs to clarify the temporal ordering of invalidating environments, emotional processes, and NSSI. In addition, the use of qualitative or mixed-method approaches could provide a more nuanced understanding of how adolescents perceive and interpret invalidating parental interactions, particularly regarding paternal figures. Including school-specific contextual variables (e.g., school climate, peer norms, or teacher support) may also help to better situate NSSI within adolescents' broader relational environments.

Conclusions

The present study provides evidence that emotional dysregulation and hopelessness are relevant psychological processes associated with the relationship between invalidating childhood environments and NSSI during adolescence. By examining the joint contribution of maternal and paternal invalidation, the findings contribute to a more nuanced understanding of family-related risk pathways to NSSI in community adolescent samples.

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