Language Development as a Mediator Between Child Maltreatment and Internalizing and Externalizing Behavior in Colombian Children and Adolescents*

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Abstract

Background: The developmental consequences of child maltreatment (CM) remain poorly understood, particularly in low- and middle-income countries. **Objective:** To examine whether language development mediates the relationship between CM and internalizing and externalizing behaviors. **Participants and setting:** 84 Colombian children and adolescents aged 5–14 (M = 9.67, SD = 2.18); 50% with a history of CM and 50% without, recruited from a child protection institution and the community, respectively. **Methods:** A cross-sectional, quasi-experimental design with two independent groups was used. Participants completed the Child Neuropsychological Assessment Battery (ENI-2) and the Child Behavior Checklist (CBCL). Mediation was tested using Ordinary Least Squares (OLS) and logistic regression. **Results:** CM was significantly associated with internalizing behavior through language development (effect = 2.1243; 95% CI [0.3184, 4.5415]; effect size = 0.473), but not directly. **Conclusions:** Language development accounts for 47.3% of the relationship between CM and internalizing behavior. Early interventions in this domain may help prevent such issues in affected children.

Keywords: child maltreatment, language development, internalizing behaviors, mediation analysis, Child Protective Services, PROCESS macro.

El desarrollo del lenguaje como mediador entre el maltrato infantil y los comportamientos internalizantes y externalizantes en niños y adolescentes colombianos.

Resumen

Antecedentes: Se desconoce en gran medida cómo el maltrato infantil (CM) afecta el desarrollo infantil, especialmente en países de ingresos bajos y medios. *Objetivo:* Analizar si el desarrollo del lenguaje media la relación entre el CM y los comportamientos internalizantes y externalizantes. **Participantes y contexto:** 84 niños, niñas y adolescentes colombianos entre 5 y 14 años (M = 9.67, SD = 2.18); 50% con historial de CM y 50% sin este, reclutados en una institución de protección y en la comunidad, respectivamente. *Métodos:* Estudio cuasi-experimental, transversal, con dos grupos. Se aplicaron dos instrumentos de evaluación: *Child Neuropsychological Assessment Battery (*ENI-2*) y Child Behavior Checklist (*CBCL*)*. Se realizó un análisis de mediación con regresión de Mínimos Cuadrados Ordinarios (*OLS) y logística. *Resultados:* El CM se asoció con comportamientos internalizantes mediante el desarrollo del lenguaje (efecto = 2.1243; CI *[0.3184, 4.5415]*; tamaño del efecto = 0.473), pero no de forma directa. *Conclusiones:* El desarrollo del lenguaje explica el 47.3% de la relación entre CM y comportamientos internalizantes. Intervenciones tempranas podrían prevenir estos problemas.

Palabras clave: maltrato infantil, desarrollo del lenguaje, conductas internalizantes, análisis de mediación, servicios de protección infantil, PROCESS macro.

Introduction

Adverse childhood experiences (ACEs) are dangerous and potentially traumatic events that occur in childhood and are preventable (Centers for Disease Control and Prevention, 2019). One of these experiences is child maltreatment (CM), understood as the perpetration of physical, sexual, and psychological/emotional violence and neglect of infants, children, and adolescents from 0 to 17 years by parents, caregivers, and other authority figures. It is a significant public health problem and a violation of fundamental human rights (WHO, 2022, p. 2). Per definition, child abuse is considered an equivalent term to CM (De Bellis et al., 2002; Hentges et al., 2021).

From an ecological model perspective (Katz et al., 2021), CM is not merely an isolated act of violence occurring within a specific relationship but rather a multidimensional phenomenon rooted in and influenced by various levels of the environment. These characteristics encompass individual factors (e.g., caregiver's personal histories or children's characteristics), family dynamics (e.g., dysfunctional interactions, domestic violence), community influences (e.g., lack of social support networks, poverty), and macro-social elements (e.g., cultural norms, inadequate public policies for child protection). This approach highlights the complexity of CM and underscores the necessity for comprehensive, coordinated interventions addressing multiple ecological levels.

Given the complex, multifaceted nature of CM and its far-reaching consequences, it is crucial to examine not only the direct effects of CM on children's development but also the underlying mechanisms through which these effects manifest. While the ecological model provides a comprehensive framework for understanding the various factors contributing to CM, it also underscores the importance of investigating how these factors interact and influence children's outcomes across different domains of functioning. By exploring potential mediating factors, such as language development, we can gain deeper insights into the pathways through which CM impacts children's behavioral and emotional well-being, thereby informing more targeted and effective interventions.

The present research seeks to study the relationship between CM and internalizing and externalizing behaviors in children and adolescents, considering language development as a possible mediating factor. Although there is extensive literature on the effects of child abuse on children's cognitive and emotional development (Kavanaugh et al., 2017; Sheridan & McLaughlin, 2020; Humphreys et al., 2020; Chung et al., 2023), little is known about the mechanisms through which these effects occur.

Building on this foundation, recent robust studies on child maltreatment in Latin America, such as those by Moreno et al. (2019) and Balan et al. (2017), have made important contributions to our understanding. These studies have focused on how parental educational styles predict internalizing and externalizing behaviors in children and how parenting practices indirectly affect adolescent internalizing problems through emotional suppression. While these findings highlight the significant role that parenting dynamics play in the emotional and behavioral development of children and adolescents, they do not fully address the mechanisms through which maltreatment impacts child development, nor do they sufficiently consider how context-specific cultural, social, and economic factors may contribute to these impacts.

This scarcity of literature is even more alarming in the Latin American context, one of the regions in the world with the highest rates of CM, where it is estimated that between 30% and 60% of children and adolescents have suffered physical or emotional violence from their caregivers (Devries et al., 2019). Therefore, this scarcity harms the understanding of the phenomenon and, from there, the development of strategies that allow for preventing and mitigating the effects of abuse on child development.

Considering the above, this research studies language development as one of the possible

mediating mechanisms of the emotional and behavioral effects of child abuse based on a cross-sectional quasi-experimental design, in which Colombian children and adolescents victims of CM who live under institutional care in the protection system are included as participants in the target group, and children and adolescents from the community in a similar condition of psychosocial vulnerability but without exposure to CM participate in the comparison group. To avoid biases related to the source of information, the study considers the collection of information directly from the participants as well as from their caregivers.

In this way, the study can provide evidence on language development as a possible explanatory mechanism of the consequences of CM on the behavioral and emotional alterations of children, pointing out a factor that can be intervened early to prevent or mitigate developmental problems in this population, which has relevance for public health and, particularly, for child protection entities, schools, and other organizations responsible for providing care and services to this population in Colombia and other Latin American countries.

CM in Latin America and Colombia

It is estimated that more than half of children and adolescents worldwide have been subjected to various forms of violence, with CM on the rise (Morales, 2021). However, most available data come from high-income countries (WHO, 2006, 2022), making it necessary to study CM in low- and middle-income nations.

According to the Inter-American Commission on Human Rights (2020), six out of ten children in the Americas are raised using violent methods, such as physical punishment and psychological aggression. A more recent UNICEF (2024) report increases this estimate to two out of every three children and adolescents between the ages of 1 and 14. These figures align with previous studies indicating that nearly 60% of children in Latin America are victims of maltreatment (Devries et

al., 2019). In turn, Colombia has been identified as one of the Latin American countries with the highest prevalence of toddlers exposed to corporal punishment —a form of physical maltreatment— and was the fourth Latin American country with the highest child homicide rates in 2013 (Cuartas et al., 2019). More recently, official Colombian statistics from 2022 showed an 18.85% increase in reported CM cases compared to 2021, with a rising trend over the past three years. The highest percentage of CM cases occurred among children and adolescents between 10 and 14 years old (Instituto de Medicina Legal y Ciencias Forenses, 2023).

Several studies have associated the high prevalence of CM in Colombia with diverse family and socioeconomic factors, such as parental unemployment and unschooling (Meza-Cueto & Navarro-Villamizar, 2022), household poverty, and the regional presence of armed violence (Cuartas, 2022). Research suggests that these factors also increase the likelihood of children being further exposed to maltreating environments (Oviedo-Tovar et al., 2021) and the loss of parental care (e.g., institutionalization) (Meza-Cueto & Navarro-Villamizar, 2022).

Consequences of CM in Children's Behavior and Affect

CM affects all domains of child and adolescent development, often leaving long-lasting sequelae into adulthood (Cook et al., 2005; Haslam et al., 2023; Moog et al., 2023). These effects include mental health disorders, cognitive impairments, and difficulties in emotional regulation, with far-reaching consequences that can span multiple generations (Moog et al., 2023) and can even be associated with a shorter life expectancy (Pérez & Díaz, 2022; Reina et al., 2022). In the emotional sphere, it has been identified that maltreated children tend to develop difficulties in emotional management, regulation, and expression, which favor the emergence of internalizing and externalizing behaviors (Eisenberg et al., 1998; Heleniak et al., 2016).

Internalizing behaviors are self-directed, whereas externalizing behaviors are directed toward the external physical or social environment (Achenbach et al., 2016). Internalizing behaviors identified in children exposed to CM are the tendency to passivity, avoidance, fear, and withdrawal (Balan et al., 2017; Milojevich et al., 2018). These symptoms are associated with the development of affective disorders such as depression (Blum & Naranjo, 2019; Fernández et al., 2020; Moretti & Craig, 2013; Shenk et al., 2015) and anxiety (Norman et al., 2012; Vilariño et al., 2015). On the other hand, the most common externalizing behaviors among children and adolescents exposed to CM are aggressiveness and impulsivity (Alink et al., 2009; Díaz-Aguado, 2001), often result in the development of behavioral disorders, social dysfunction, and involvement with judicial entities. Internalizing and externalizing behaviors are not mutually exclusive; rather, they are usually present simultaneously (Achenbach et al., 2016; Nivard et al., 2017; Patalay et al., 2017).

Consequences of CM in Children's Language Development

From a neurodevelopmental-social-constructivist perspective (Vygotsky, 1987; Valsiner & Van der Veer, 2014; Yasnitsky, 2018), language is a cognitive process that emerges from the interplay between biological maturation and social interaction, both of which can be severely affected in children exposed to CM (McDonald et al., 2013). According to Cummings and Berkowitz (2014), most cases of CM begin during early childhood, a critical period for language development. In this regard, it has been identified that caregivers who use abusive practices tend to interact less with children, ignore them more, react less frequently to their speech attempts, and use a more limited range of vocabulary and syntactic structures during communication with them (Girard et al., 2014), which negatively affects their linguistic and socio-emotional skills through the lack of adequate stimulation. Likewise, CM can cause structural and functional brain damage that harms children's language development (De Bellis et al., 2013; Amaro Hurtado, 2018). Specifically, neurological sequelae and structural damage have been found in the temporal and frontal lobes, impairing language, learning, and memory functions (Deambrosio et al., 2018).

Research consistently demonstrates a significant relationship between CM and language problems, with maltreated children exhibiting poorer language skills across receptive, expressive, and pragmatic domains (Bouchard et al., 2016; Lum et al., 2015; Sylvestre et al., 2016). This association is particularly pronounced in younger children (Sylvestre et al., 2016). Bouchard et al. (2016) identified in a meta-analysis of 23 studies that language development is compromised regardless of the type of maltreatment —physical abuse or neglect— to which the child was exposed. On the one hand, in receptive language, it was identified that maltreated children understand fewer words and verbal instructions, while in their expressive language, a low syntax complexity and a delay in lexical development were observed, which impacts their development of social skills. Similarly, research on recently institutionalized Latin American children, aged eight, found scores lower-than-expected for their age in language expression, comprehension, and metalinguistic skills (Cobos-Cali et al., 2017).

Language abilities play a crucial role in emotional reminiscing, with maltreatment disrupting the association between child language and mother-child emotional dialogues (McDonnell et al., 2019). Furthermore, language disorders are associated with behavioral, emotional, and social problems, particularly disorders involving comprehension and pragmatic components (Baixauli-Fortea et al., 2015). However, methodological inconsistencies in maltreatment and language measurement complicate the understanding of these relationships (Alvarado et al., 2022).

Language Development and Internalizing and Externalizing Behaviors

Vygotsky (1987) proposed language as an essential tool for self-regulation skills development based on observations of children gradually learn to use internal speech to regulate their emotions and organize their behavior (Stanley et al., 2011). Several studies have associated early language development alterations with emotional and behavioral problems later in life (Hentges et al., 2021; Lindsay et al., 2012; St Clair et al., 2011; Yew & O'Kearney, 2015). Specifically, Salmon et al. (2016) found that children with poor language skills have difficulties recognizing and understanding their own and others' emotional expressions, which is associated with the development of internalizing behaviors. The association between alterations in language development and externalizing behaviors has also been observed (Hentges et al., 2021).

Conversely, adequate language development has also been identified as a protective and resilience factor in various ACEs. For instance, Flouri et al. (2014) found that children's emotional difficulties associated with poverty were moderated by their verbal ability since those who were in a situation of poverty and did not present language alterations showed a greater capacity for emotional regulation than those with the same socioeconomic conditions, but with affected language development. Similarly, Moreno et al. (2020) identified good communication skills as a protective factor for developing externalizing and internalizing behaviors.

Despite the relevance of the association between these variables, the relationship between language development, internalizing behaviors, and externalizing behaviors has been little studied, particularly in Colombia and Latin America, where no known study to date has explored language development as the mediator in the relationship of CM and this type of behaviors. For this reason, it is relevant to widen research in this area by understanding the role of language development in the emergence of such difficulties, which could foster the development of strategies for the prevention of internalizing and externalizing behaviors in children exposed to CM.

Current Study

Based on the above, the present study seeks to provide evidence on the mediating role of language development in the relationship between CM, internalizing behaviors, and externalizing behaviors. As hypotheses of the mediation model, it is expected based on correlations previously identified in the literature: first, that language development is found a significant mediator in the relationship between CM and both externalizing behaviors (Bress et al., 2013; Borenstein et al., 2014) and internalizing behaviors (Hentges et al., 2021; McDonnell et al., 2019).

Methods

This study employs a quasi-experimental cross-sectional design comprising a target group (CMG) and a comparison group (CG), in which the variables of sex, age, and sociodemographic conditions were controlled.

Participants

The initial sample consisted of 100 participants. After a 16% dropout rate, the final sample comprised 84 children and adolescents aged 5 to 14 years (M = 9.67, SD = 2.18). Participants were divided into two groups: the CM group (CMG), made up of 45 children (age range = 6–13 years, M = 9.66, SD = 2.18) with a history of abuse and institutionalized under the Colombian Child Protective Services (ICBF); and the comparison group (CG), made up of 39 children (age range = 5–14 years, M = 9.69, SD = 2.19) with no history of maltreatment. The CG participants were recruited from a community center and lived with their main family caregivers.

Overall, 77.4% of the participants were children (aged 5–11 years; CMG: n = 36, CG: n = 29), and 22.6% were adolescents (aged 12–14 years; CMG: n = 9, CG: n = 10). Regarding gender distribution,

56% of the participants were male (CMG: n = 23, CG: n = 24), and 44% were female (CMG: n = 22, CG: n = 17).

In addition to the age range, between 5 and 14 years, the main inclusion criterion for the CMG and, therefore, the main exclusion criterion for the CG was having a history of CM, assessed by a screening survey that collected sociodemographic data and explored exposure to thisadverse experiences. An additional exclusion criterion for both groups was a diagnosis of intellectual disability or severe neurological disorders.

The CG was recruited from a community center that provides extracurricular care to children from socioeconomically vulnerable conditions. From this population, the participants who could be matched by age, sex, and socioeconomic level with the CMG participants were selected for the CG, accepting an age difference of up to ±7 months. This matching process was implemented to ensure comparability between groups and minimize the influence of other variables on the results so that the observed differences could be more directly attributed to CM.

Measures

Sociodemographic Survey

This ad hoc instrument was designed by the Center for Research in Social Dynamics (CIDS) of the Externado University of Colombia (Muñoz & Caicedo, 2018). The survey consists of 28 items, including 12 closed questions answered in a yes/no/don't know format and the remaining items answered qualitatively. It collects data on the child's demographics (e.g., sex, age, ethnicity, education, and socioeconomic level), developmental issues (e.g., Did the child/adolescent have premature birth?), medical and mental health conditions (e.g., Does the child/adolescent currently present a condition of malnutrition or risk of malnutrition?), and critical early life events, including exposure to CM and other ACEs (e.g., Was the child/adolescent placed in a foster home?; Reason for admission to

the institution). The survey's administration was carried out by a trained interviewer and it lasted 15-30 minutes per participant. For the CG, the survey's respondents were the children's family caregivers, whereas for the CMG, the information was provided by institutional caregivers and triangulated with the Child Protective Services case records, which are the most reliable documents available to collect information on institutionalized children in Colombia (Granados et al., 2021).

Child Behavior Checklist (CBCL)

The CBCL is a hetero-administered standardized instrument that assesses behavioral and emotional problems in children and adolescents aged 6 to 18 years from the perspective of their primary caregivers (Achenbach & Edelbrock, 1983). It is extensively used in mental health services, schools, medical settings, child and family services, public health agencies, child guidance, training, and research (Bordin et al., 2019). The CBCL consists of 113 items regarding emotional and behavioral symptoms, answered on a three-point Likert scale (0 = not true, 1 = somewhat or sometimes true, 2 = very true or frequently true). The instrument provides raw and standardized (T) scores for two global scales (i.e., "Internalizing" and "Externalizing") and four additional subscales (Achenbach et al., 2001). Only the T scores for the two global scales were used in the present study.

The CBCL has been widely used in the Latin American context and has undergone consistency assessments, adaptation, and validation processes for 44 societies, including the Colombian population (Rescorla et al., 2012). Regarding reliability, the Cronbach's alpha found in the present study was 0.94, indicating high internal consistency, similar to previous research (Achenbach et al., 2001; Bordin et al., 2019).

Child Neuropsychological Evaluation Battery 2 (ENI-2)

The ENI-2 is a battery developed in Colombia by Matute et al. (2014) that comprehensively

assesses neurocognitive development in children and adolescents aged 5 to 16 years. It is administered directly to children by an evaluator, with a total application time of approximately 3 hours. The ENI-2 assesses lateral preference, soft neurological signs (i.e., neurological deficits related to perceptual-sensory integration and motor coordination), and 11 neuropsychological processes (e.g., attention, constructional skills, memory, perception, language, conceptualization skills). The present study focused on the language subscale, which evaluates verbal expression and comprehension through different tasks, such as the repetition of syllables and words, image naming, narrative coherence, following instructions, and speech comprehension. The application time for this subscale was 20-30 minutes.

The ENI-2 is one of the most widely used neuropsychological instruments in Colombia, as it provides a clear perspective on brain, cognitive, and learning functioning in children and adolescents and, if necessary, permits obtaining the determination of IQ levels (Rosselli et al., 2021). Similarly, the ENI-2 is used in other Latin American countries, such as Ecuador (Pérez, 2015), Chile (Aviles et al., 2018), and Argentina (Aran-Filippetti et al., 2016), and has demonstrated good validity and reliability results (Matute et al., 2014). Cronbach's alpha, calculated from the T-scores of the 13 ENI subscales, indicated high reliability ($\alpha = 0.945$), reflecting strong consistency across the subscales.

Ethical Considerations

The study received approval from the Externado University of Colombia Ethics Committee. The ethical and legal principles that govern psychological research with minors were strictly followed. The conditions of participation in the study were explained to both the participants and their guardians, and their written informed consent was obtained. For the CG, the guardians were the family caregivers, while for the CMG, the Family Advocate provided consent. Finally, the results of the participants' assessments were shared with

their caregivers to ensure the well-being of the children, particularly in cases where the need for referral to specialized care was detected.

Procedure

The study was presented to the Child Protective Services (CPS) institution and the community services center. Any questions regarding the study's objectives, procedures, and potential risks or benefits were answered, and the referral criteria were explained. Subsequently, the CPS institution and the community center provided a list of all available children and adolescents who met the study criteria. The investigators then contacted potential participants. The study was explained to both the child and their caregiver, and all questions were answered. Informed consent was obtained after both the legal guardian and the child agreed to participate.

Once the CMG was established, children from the community services center who met the study criteria and were comparable in age, sex, and socioeconomic status to the CMG participants were selected to form the CG.

To ensure that the referred children and adolescents from both groups met the study criteria and to collect their basic demographic data, the family or institutional caregiver completed the Sociodemographic Survey with the support of a trained interviewer. For children in CPS, the institution's coordinator appointed one institutional caregiver per child to fill out the questionnaires. These institutional caregivers were selected based on their familiarity with the child. For children in the CG, it was their main family caregiver who filled out the instruments. Finally, the appointed caregiver in each case filled out the CBCL, and the child was assessed with the ENI-2 by a trained evaluator.

Statistical Analyses

First, sample size adequacy and group equivalency were tested, and the normality tests for the study variables (language development,

internalizing behaviors, and externalizing behaviors) and the descriptive statistics were carried out. Second, bivariate Spearman correlation analyses were performed to examine the relationships between variables within each group. Finally, a mediation analysis was conducted to examine the role of language development in the relationship between CM and internalizing/externalizing behaviors. This analysis was performed using the PROCESS macro (Hayes & Hofmann, 2018) in SPSS v22.0, implementing Model 4 with 10,000 bootstrap samples at a 95% confidence interval to ensure robust and reliable estimates of indirect effects, given the relatively small sample size and the non-normality of the data. The bootstrap method is widely recommended for mediation analyses, as it provides more accurate confidence intervals for indirect effects, particularly when normality assumptions are not met (Preacher & Hayes, 2008).

Results Sample Size and Equivalency of Groups

A post-hoc power analysis was conducted using G*Power to assess the adequacy of the sample size. With 84 participants and a moderate effect size (d = 0.15), the power was found to be 0.89, indicating an 88.69% probability of detecting a real effect. This suggests that the sample size was adequate for detecting significant relationships in the study.

Regarding group equivalency, preliminary statistical analyses did not find significant differences between the groups in the matched variables of age, sex, and socioeconomic level (p > .05) but did find differences in educational level: it was identified that the CG children had completed more years of formal education than CMG children (F (1, 99) = 5.32, p < .05). Otherwise, the groups only varied in terms of residence between living with their family and not having a history of CM (CG) and living in a protective service institution and having a history of exposure to CM (CMG). This is coherent with the matching design and supports comparability between groups.

Normality Tests and Descriptive Statistics

The Shapiro-Wilk tests showed that the language development variable was normally distributed in both groups (CMG's p = .031, CG's p = .09), while the internalizing behaviors (CMG's p = .01, CG's p = .02) and externalizing behaviors (CMG's p = .02, CG's p = .02) variables were not normally distributed in either group. Therefore, non-parametric statistics were applied for group comparisons and bivariate correlations.

On average, CMG participants had higher scores on the Internalizing (M = 52.2, SD = 10.6, p = .03) and Externalizing (M = 54.5, SD = 10.6, p = .00) scales of the CBCL compared to CG participants (see Table 1), indicating that children exposed to CM present greater emotional and behavioral symptoms than children without such a history. In contrast, CG participants had higher scores on the language development scale (M = 48.5, SD = 7.7, p = .00) of the ENI-2 compared to CMG participants, suggesting that children exposed to CM have lower language development than their peers. These group differences were statistically significant in Mann-Whitney U tests.

Bivariate Spearman's Correlations

On the one hand, in the CMG, it was shown that the internalizing behaviors and language development variables were significantly, moderately, and inversely correlated (r = -0.317, p = .034), indicating that participants with a history of CM and lower language development showed more internalizing behaviors. However, externalizing behaviors variable did not correlate with language development (r = 0.116, p = .45), leading to the rejection of the first mediation model.

Regarding the CG group, language development variable did not significantly correlate with internalizing behaviors (r = -0.169, p = .24) or externalizing behaviors (r = -0.154, p = .20),

suggesting no significant relationship between linguistic development and internalizing or externalizing behaviors in children without CM.

Mediation Analysis

Considering the Spearman's correlation results, only mediation model 2 was considered. Results are shown in Figure 1 below.

It was found in pathway *a* that the direct effect of CM on language development was significant (effect = -8.2, Boot 95% CI [-11.4, -4.9]), as was the direct effect of language development on internalizing behaviors in the pathway *b* (effect = -0.2, Boot 95% CI [-0.50, -0.006]). In contrast, in pathway *c*, the direct effect of CM on internalizing behaviors was not found significant (effect = 2.3, Boot 95% CI [-2.12, 0.6]).

Figure 1

Mediation Model

Note. Author's elaboration

M
2,1243

Language Development

a -8,2378

X

Child Maltreatment

c 2,3610

b -0,2579

Y

Internalizing Behavior
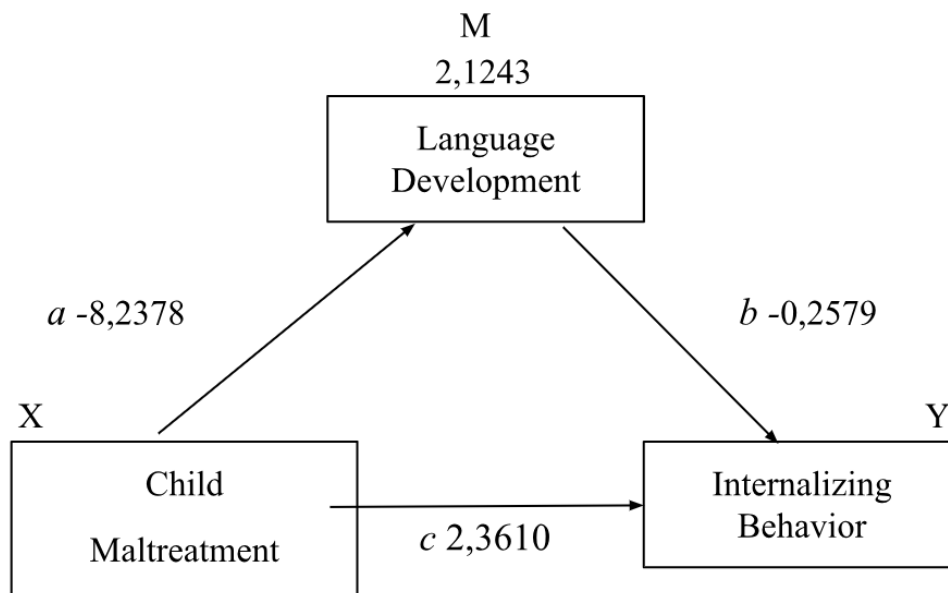
Table 1.
Descriptive statistics

	Mean CMG	SD CMG	Mean CG	SD CG	P U-Mann-Whitney
Language Development	40.2	8.7	48.5	7.73	.00
Internalizing behavior	52.2	10.6	47.9	9.2	.03
Externalizing behavior	54.5	10.6	46	6.9	.00

Note. Author's elaboration

Finally, the indirect effect of language development on internalizing behaviors in pathway M was found to be significant (effect = 2.12, Boot 95% CI [0.31, 4.48]). The effect size was 0.473, indicating that 47.3% of CM's total effect on internalizing behavior is explained through language development, suggesting a moderate to strong mediation relationship.

Discussion

This study aimed to contribute to the understanding of the mediating mechanisms that explain the pervasive and generalized sequels of CM on children's and adolescents' development by studying language as a mediator in the relationship between CM and internalizing and externalizing behaviors. Although no previous literature that addresses such mediation was identified, the results of the present study are partially consistent with previous findings from correlational studies.

Correlations Between CM, Language Development, and Internalizing and Externalizing Behaviors

First, the results showed that in the studied sample, CM was significantly associated with internalizing behaviors. It is consistent with previous findings that correlate children's internalizing behaviors with the use of inconsistent discipline strategies by their caregivers, including little response to their needs and usage of corporal punishment (Balan et al., 2017). According to these authors, such caregiving behaviors can lead to difficulties in emotional regulation and increase the risk of developing mental health disorders, such as anxiety and depression. At the same time, these findings support what has been found so far in research conducted in the Colombian context. For example, Moreno et al. (2019) found that children exposed to maltreatment exhibited a high prevalence of internalizing behaviors.

On the other hand, this study showed that CM correlates significantly inversely with language development. That is to say, the greater the exposure

to CM, the greater the probability of presenting language development difficulties. These findings are consistent with what was described by Bouchard et al. (2016), who conducted a meta-analysis of 23 studies and found that 65% of children aged 14-55 months with a history of child abuse and enrolled in a child protection preschool exhibited delays in language development. It is consistent with the meta-analytic findings of Kavanaugh et al. (2017), which indicate that children with a history of childhood abuse often exhibit neurocognitive deficits, such as those related to cognitive and emotional regulation, both of which are closely linked to language skills and mental health outcomes. These findings can be explained by considering that CM is usually characterized by low levels of caregivers' response to children's physical and emotional needs, including the deprivation of communicative interactions (Girard et al., 2014).

Studies indicate that children who experience violence and fear —rather than kindness and security— and who lack opportunities to express themselves within secure attachment relationships have fewer opportunities to develop their language skills. Relational experiences are critical, as they form the basis of linguistic competence (Snow, 2009; Sylvestre et al., 2015; Lum et al., 2018; Humphreys et al., 2020; Chung et al., 2023). Children suffering from CM may experience a lack of emotional and cognitive support, given that they often are criticized and rejected, emotionally neglected, and little stimulated by their parents (Hornor, 2012). These adverse effects of CM may persistently alter the maturation processes (De Bellis et al., 2002), leading to long-term socioemotional and cognitive difficulties, including deficits in language development.

Moreover, according to what was found by Salmon et al. (2016), children with alterations in their linguistic development often present difficulties in recognizing and understanding their own emotions and those of others. The authors explain that recognition and understanding of emotions are critical for developing and maintaining social

relationships based on empathy and appropriate emotional communication and expression; likewise, alterations in these capacities are associated with internalizing problems. Thus, adequate language development is an essential factor for optimal socio-affective development in children.

However, in the present study, no statistically significant correlations were found between language development and externalizing behaviors in either group, leading to the rejection of mediation hypothesis 1 (Figure 1). This result differs from findings in other investigations where inadequate language development has correlated significantly with the emergence of externalizing behaviors in children, particularly those with a history of CM (Bress et al., 2013; Borenstein et al., 2014; Chow & Wehby, 2018; Hentges, 2021). This discrepancy may be explained by the presence of other mediating variables between maltreatment and externalizing behaviors in the present sample, such as deficits in impulse control development and stress response strategies (Kim et al., 2009; Heleniak et al., 2016), heightened reactivity, or exposure to specific parenting styles (Ruiz-Hernández et al., 2019). Therefore, it is relevant to consider these factors as specific mediators in future research.

The Mediating Role of Language in Internalizing Behaviors

Additionally, the present study found that CM is significantly associated with internalizing behaviors through its impact on language development, confirming mediation. These results are consistent with findings from Bornstein et al. (2014) and Flouri et al. (2014), who explain that language skills are a strong predictor of emotional and behavioral regulation in children because they function as tools to discriminate their emotional states and find solutions to stressful situations. In agreement, Sheridan & McLaughlin's (2020) and Hentges et al. (2021) observe that children with speech or language disorders frequently exhibit internalizing emotional and behavioral problems.

Thus, the present study supports the notion that language development serves as a promoting factor for the adequate socio-emotional development of children and adolescents and as a risk factor for the development of internalizing psychopathologies, such as depression and anxiety (Hentges et al., 2021). Therefore, early language interventions could help prevent the development of emotional and behavioral disorders in children and adolescents (Kerns et al., 2014; Greenwald et al., 2015; Rohde et al., 2016), especially in those affected by ACEs, such as CM.

Previous studies have shown that the development of linguistic skills represents a protective factor for children exposed to poverty (Flouri et al., 2014), which is a highly prevalent ACE in low- and middle-income countries. This protective effect could be explained by considering that language promotes the child's connection with their psychosocial and cultural context, which, in turn, boosts their abilities to adapt and develop tools to satisfy their needs. In the context of vulnerability in which children with ACEs live (Meza-Cueto & Navarro-Villamizar, 2022), such abilities can represent a way to overcome adversity and its consequences in both cognitive and emotional development.

Finally, it is essential to highlight the role of language development in child psychopathology, particularly for children exposed to CM. As previously mentioned, Vygotsky (1987) proposed that inner speech is a fundamental tool for developing self-regulation skills (Stanley et al., 2011). Inner speech is the internalized, self-directed speech that serves as a self-regulatory tool for thinking, planning, and self-organization; it is highly dependent on language development (Wallace et al., 2009). When impairments or delays occur in the internalizing of speech, there may be implications for behavioral self-regulation, metacognition, self-awareness, and self-understanding (Morin, 2005; Winsler & Naglieri, 2003).

Based on the results reported in this study, further exploration of the mechanisms underlying

the effect of CM on internalizing problems would be valuable. The impact of impaired language development in children who have experienced CM appears to extend beyond the difficulties in expressing themselves and is rather deeply related to other higher-order cognitive skills, such as inner speech, which seems to have a profound impact on child psychopathology.

Scope, Limitations, and Future Directions

The present study provides valuable results for understanding the mechanisms underlying the effect of CM on the development of child psycho-pathologies and, consequently, for the design of promotion and prevention strategies for mental health in children and adolescents in vulnerable contexts. Furthermore, this research provides preliminary information on child victims of maltreatment in Colombia, which serves to address the literature gaps regarding the study of ACEs in low and middle income countries.

Although the results are promising and largely consistent with previous research, it is essential to recognize that, due to the methodological design, limited representativeness, and small sample size, the conclusions are specifically valid for children and adolescents within the Colombian Child Protective Services system. These findings may be cautiously generalized to populations in other Latin American countries provided they have similar cultural and socioeconomic contexts to the present sample but should not be generalized outside the population studied without conducting additional research. In this regard, it is pertinent to consider some limitations.

First, the study did not differentiate among specific types of CM, instead analyzing it as a global variable. This approach does not allow us to determine if the mediating effect of language varies depending on the type of maltreatment experienced or if said type has a greater impact on internalizing behaviors. Similarly, some participant variables that could be relevant, such as the age of

onset and duration of exposure to maltreatment, were not included in the analysis. In this regard, future research should consider these variables to deepen the understanding of language's mediating role in internalizing problems and the influence of CM on this relationship.

Furthermore, due to its cross-sectional design, the present study does not allow us to observe how CM and language development interact over time, which restricts the possibility of establishing solid causal relationships between CM and internalizing or externalizing behaviors. Therefore, it would be valuable for future studies to investigate, through longitudinal designs, the interactions between language development and internalizing behaviors of child victims of CM over time.

As stated above, the findings of this study are particularly relevant to children and adolescents exposed to CM and experiencing socioeconomic vulnerability, especially within the Colombian context, but they cannot be generalized as they were obtained through a quasi-experimental design and non-random sampling. In this regard, future research could be carried out in other regions of Colombia and Latin America to determine whether the observed mediation effect is present in other populations with CM problems like those in the Colombian context. Replications would be especially useful to determine the exact relationship between CM, language development, and externalizing behavior, the above considering the mixed evidence found. In this sense, increasing the sample size and employing probability sampling in the selection of participants could improve the representativeness of the sample and strengthen the generalizability of possible findings.

To not affect the pattern of results, it would be important to preserve the age range of participants and the contexts from which they are selected, such as child protection institutions and community organizations.

Finally, regarding measurement instruments, it would be interesting for future research to analyze the convergent validity of these findings

by implementing other linguistic development assessments, such as the Test of Language Development (TOLD-4) for English-speaking populations or the Objective and Criterial Language Battery (BLOC) for Spanish-speaking populations.

Conclusions

This study aimed to contribute to the growing body of knowledge on the consequences of CM on children's cognitive, emotional, and behavioral development by analyzing the mediating effect of language development on the relationship between CM and internalizing and externalizing behaviors. Based on the findings, the following conclusions can be drawn:

1. CM significantly predicts the presence of internalizing behaviors in children.

2. This relationship can be explained through the mediation of language development, which means that, through the negative impact on language development, CM affects children's ability to express their emotions and thoughts and this, in turn, is associated with the emergence of internalizing behaviors.

3. Inner speech may be a crucial variable to include in future studies seeking to understand the mechanisms underlying the effects of CM on internalizing problems and the mediation role of language development in this relationship.

4. Further research is required to explore additional variables that could help to understand whether this mediation effect also applies to externalizing behaviors, as no significant findings were observed in this study.

5. The study provides preliminary evidence suggesting that early language development interventions for child victims of maltreatment may be effective in reducing internalizing behaviors. This has important implications for public health and, in particular, for child protection agencies responsible for restoring children's rights in Colombia, Latin America, and beyond.

In this sense, prevention programs with the population should focus on developing language skills related to emotional processing, such as discrimination, nomination, and verbal expression, as these abilities facilitate subsequent emotion regulation (Girard et al., 2014; Moreno et al., 2020; Hentges et al., 2021). Moreover, programs should encourage verbal interaction between family members or institutional caregivers and children through play-based activities, which could foster emotional expression in a safe environment.

For children with a history of maltreatment, engaging in communicative activities that help them verbalize their needs and emotions in appropriate ways —such as role-playing exercises— can promote the learning of alternative strategies to internalizing and externalizing behaviors (Lum et al., 2015; Hentges et al., 2021). Furthermore, creating spaces where children can interact with peers through linguistic activities, such as simple debates or cooperative games, can help them develop skills to better manage interpersonal conflicts. Finally, educational curricula for children affected by CM should integrate activities that improve both comprehension and verbal production, supporting their cognitive, social, and emotional integration.

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