

Research Article

The Structural Model of Childhood Emotional Abuse and Psychological Distress: The Mediating Role of Executive Functions

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How to Cite

Bahrami, Z. , ghodsi, P. and Hassani, F. (2025). The Structural Model of Childhood Emotional Abuse and Psychological Distress: The Mediating Role of Executive Functions. Iranian Journal of Health Psychology, 8(3), 91 -104. doi:10.30473/ijohp.2026.76351.1433

Abstract

Objective: One kind of violence and social injury that harms the victim and the family's physical and mental well-being is domestic violence. Years after the violence has stopped, its repercussions may still be felt. The purpose of this research was to examine the structural model of childhood emotional abuse on psychological distress with the mediation of executive functions in women victims of domestic violence.

Method: This study was a descriptive-correlational study conducted using structural equation modeling (SEM). The statistical population included 650 women referred to Social Emergency Welfare Centers (123) in Tehran in 2023 (1402 in the Iranian calendar). Participants were selected purposively based on predefined criteria. Data were collected using the Childhood Emotional Abuse Questionnaire, Executive Function Questionnaire, Short Form Domestic Violence Screening Scale, and Psychological Distress Questionnaire. The data were analyzed using SEM and model fit indices in AMOS software.

Results: The model fit indices for the causal model of psychological distress based on childhood emotional abuse, mediated by executive functions in women with domestic violence experiences, were greater than 0.90. indicating acceptable and desirable values. The findings show that the direct, indirect, and total effects in the model of executive functions in the relationship between childhood emotional abuse and psychological distress were significant at the 0.05 level.

Conclusion: The findings indicate that childhood emotional abuse significantly contributes to psychological distress in women who have experienced domestic violence, with executive functions mediating this relationship. These results highlight the importance of interventions targeting executive functioning to mitigate the enduring psychological effects of early emotional maltreatment in this population.

Keywords: Childhood Emotional Abuse, Executive Functions, Domestic Violence, Health, Psychological Distress.

Extended Abstract

Background and Objectives

Domestic abuse is a widespread issue that undermines social and familial structures. It is a serious public health problem and a human rights concern. Gender-based violence against women can result in unintended pregnancies, physical, psychological, and sexual suffering, lack of food and social interaction, and, in some cases, death. Violence against women also limits access to opportunities and social, political, and economic equality. It has roots in social and cultural contexts and is not a recent problem, with marital disputes and male superiority frequently underlying such violence. Intimate partner violence is strongly linked to adverse mental health outcomes, including depression, PTSD, and suicidal thoughts. Systematic reviews indicate that exposure to such violence leads to persistent psychological distress, highlighting the long-term impact on women's mental health. Globally, over a quarter of women aged 15–49 report experiencing physical or sexual violence by intimate partners. Emotional abuse and neglect in childhood are strongly linked to adult psychopathology, including depression, anxiety, and psychotic symptoms. Meta-analytic and longitudinal evidence show that emotional abuse exerts stronger long-term effects on psychological adjustment than other forms of childhood abuse.

Childhood emotional abuse, including neglect and abuse, increases the risk of adult psychological distress and may affect mental health through higher neuroticism. Women with histories of childhood abuse who experience intimate partner violence show higher levels of psychological distress, PTSD, depression, anxiety, and suicidal ideation. Childhood abuse increases emotional vulnerabilities that heighten risk for later victimization and adverse mental health outcomes. Early-life stress and trauma exposure also affect cognitive skills, particularly executive functions. Chronic stress impairs executive functions such as working memory and cognitive control, crucial for regulating emotion and behavior, contributing to psychological distress and vulnerability to depression and anxiety. Childhood emotional abuse is a prevalent risk factor for long-term psychological distress, especially among women who have experienced domestic violence. Understanding the mechanisms through which early emotional abuse affects mental health is essential for developing effective prevention and intervention strategies. Therefore, the present study aimed to examine a model in which executive functions mediate the relationship between childhood emotional abuse and psychological distress in women exposed to domestic violence. The findings can provide valuable insights for designing clinical interventions and educational programs for women and couples.

Materials and Method

This descriptive-correlational study employed structural equation modeling (SEM) to examine the relationships between childhood emotional maltreatment, executive functions, and psychological distress in women with IPV histories. Participants were 650 women attending Social Emergency Welfare Centers in Tehran Province in 2023, recruited through purposive sampling. Inclusion criteria included adult women with self-reported experiences of domestic violence. Ethical approval was obtained ([IR.IAU.CTB.REC1402.201](#)), and informed consent was secured. Data collection included a demographic checklist (age, education, occupation, marriage duration, number of children, income) and standardized instruments: Najati's Executive Function Questionnaire (30 items), assessing memory, inhibitory control, and selective attention, decision-making, planning, sustained attention, social cognition, and cognitive flexibility. Items scored 1–5; total score 30–150; Cronbach's alpha = 0.87. Childhood Trauma Questionnaire–Short Form (CTQ-SF, 10 items): Emotional abuse and neglect subscales rated 1–5; higher scores indicate greater maltreatment; Cronbach's alpha = 0.91. Kessler Psychological Distress Scale (K10, 10 items): Scores 10–50; higher

scores indicate greater distress; Cronbach's alpha = 0.76. HITS Short Form Domestic Violence Screening Scale (4 items): Assesses frequency of being hurt, insulted, threatened, or screamed at; total score >10 indicates IPV; Cronbach's alpha = 0.84. SEM analyses in AMOS assessed model fit, path coefficients, and factor loadings at a significance level of 0.05.

Results

Participants' mean age was 30 years (SD = 11), with early marriage common (mean age at first marriage = 21). Most women were housewives (92.9%) with primary education (46.3%), and household income predominantly below 150 million rials. Descriptive analyses indicated moderate-to-high childhood emotional maltreatment, high psychological distress, and average executive functioning. The structural model demonstrated acceptable fit ($\chi^2/df=3.36$, RMSEA=0.068, GFI=0.963, CFI=0.974, NFI=0.905).

Path analysis revealed that childhood emotional maltreatment positively predicted psychological distress and negatively predicted executive functions, which in turn negatively predicted psychological distress. Executive functions partially mediated this relationship, with direct, indirect, and total effects significant at $p < 0.05$, accounting for 14% of the total effect. Correlations supported the model: emotional maltreatment was positively associated with distress ($r = 0.58$) and negatively with executive function ($r = -0.52$).

Discussion and Conclusion

The findings indicate that childhood emotional maltreatment is a significant predictor of psychological distress among women with IPV exposure, operating directly and indirectly through impaired executive functions. Early emotional abuse likely disrupts prefrontal-limbic networks, impairing cognitive control, emotional regulation, and stress resilience. These deficits increase vulnerability to later interpersonal violence and exacerbate psychological distress. Executive dysfunction emerged as a key mediator, highlighting its relevance as a target for intervention. Clinically, programs enhancing cognitive control, emotion regulation, and social-cognitive skills may mitigate long-term psychological consequences of childhood maltreatment in women exposed to IPV. This study is limited by its cross-sectional design, reliance on self-report instruments, and focus solely on women, restricting causal inferences and generalizability. Future research should include longitudinal designs, neuroimaging assessments, and diverse populations to clarify causal pathways. Interventions targeting executive and social-cognitive skills should be tested for efficacy. Integrating cognitive, neurobiological, and psychosocial approaches may enhance understanding and improve mental health outcomes for women exposed to childhood maltreatment and domestic violence.

Introduction

Domestic abuse is a widespread issue that undermines social and familial structures. It is a serious public health issue in addition to its human and human rights implications. Gender-based violence against women ignores all of their rights and is perpetrated by the other sex. It can result in unintended pregnancies, physical, psychological, and sexual suffering, as well as lack of food and social interaction, and in certain situations, it can even be fatal. Access to opportunity, growth, and political, social, and economic equality can all be hampered by violence against women. It has origins in social and cultural contexts and is not a recent problem. Moreover, marital disputes and male superiority toward women are frequently the root

causes of this violence (Ha et al., 2020). Intimate partner violence against women is strongly associated with adverse mental health outcomes, including depression, posttraumatic stress disorder (PTSD), and suicidal thoughts. Systematic reviews and meta-analytic evidence indicate that exposure to such violence consistently leads to significant psychological distress, highlighting the long-term impact of interpersonal violence on women's mental health (White et al., 2024).

All over the world, more than a quarter (27%) of women, between 15 and 49 years old, have reported that they had suffered from physical/sexual violence by their intimate partners (WHO, 2021).

Emotional abuse and neglect during childhood are strongly linked to adult psychopathology, including depression, anxiety, and psychotic symptoms. Evidence from meta-analytic and longitudinal studies indicates that emotional maltreatment exerts stronger long-term effects on psychological adjustment than other forms of childhood abuse (Humphreys et al., 2020; Baldwin et al., 2023; Isvoranu et al., 2022).

Childhood emotional maltreatment, including neglect and abuse, increases the risk of psychological distress in adulthood, such as depression and anxiety. Early emotional abuse has been shown to affect adult mental health partly through higher levels of neuroticism (Alnassar et al., 2024). Systematic evidence also indicates that childhood emotional maltreatment predicts a broad range of adult psychopathology, highlighting its long-term impact on mental health (Xiao et al., 2022).

The study by Smith, Oram & Mantovani (2025) showed that women with a history of childhood abuse who experience intimate partner violence show higher levels of psychological distress, PTSD, depression, anxiety, and suicidal ideation. Psychological IPV is especially linked to increased distress

Genetically informed population study (Pezzoli & et al, 2024) indicated that Childhood maltreatment increases the likelihood of adult IPV victimization; early maltreatment contributes to emotional vulnerabilities that heighten risk for later victimization and adverse mental health outcomes

Early-life stress and subsequent trauma exposure have an impact on cognitive skills, particularly executive functions, as evidenced by the emotional and physical effects of trauma exposure. The prefrontal cortex is a key component of the fronto-cingulo-parietal-subcortical networks that are connected to executive function domains on a neurological level (Friedman & Miyake, 2017).

Chronic stress impairs executive functions, such as working memory and cognitive control, which are crucial for regulating emotion and behavior, and these impairments contribute to psychological distress and heightened vulnerability to depression and anxiety (Girotti et al., 2024; He et al., 2025).

People with anxiety and depressive disorders showed notable deficiencies in episodic memory, according to a study by Airaksinen (2006) that involved women who had been victims of domestic abuse. Anger symptoms, borderline personality traits, criminal history, depression symptoms, history of sexual abuse, negative attribution styles, communication problems, social disintegration, and substance abuse were among the psychological harms that victims of domestic violence displayed, according to another study (Mohammad Khani & Azad Mehr, 2019). Furthermore, study data (Pournaghash Tehrani, 2017) show a negative correlation between psychological distress (such as anxiety and depression) and cognitive functioning, meaning that cognitive performance declines as psychological distress rises. According to a study (Daugherty et al., 2021), a high prevalence of executive function issues is reported by female survivors of assault. Higher levels of PTSD and depression may be reflected in self-reported executive function deficiencies, indicating the need for more testing and potentially therapy. Childhood emotional

maltreatment is a prevalent risk factor for long-term psychological distress, particularly among women who have experienced domestic violence. Understanding the mechanisms through which early emotional abuse affects mental health is essential for developing effective prevention and intervention strategies. Therefore, the present study aimed to examine a model in which executive functions mediate the relationship between childhood emotional maltreatment and psychological distress in women exposed to domestic violence. The findings of this research can provide valuable insights for designing clinical interventions and educational programs for women and couples

Method

Participants

This study employed a descriptive-correlational design and structural equation modeling (SEM). The statistical population included all women who visited Social Emergency Welfare Centers in Tehran Province in 2023 (1402 Iranian calendar) and had experienced domestic violence.

The researcher, after obtaining the necessary authorizations, referred to the Tehran Province Welfare Organization and its Social Emergency Centers to identify eligible participants. Following clarification of the study objectives and assurance of confidentiality, meetings were held with psychologists and social workers, securing their cooperation in data collection.

A sample of 650 women was selected using purposeful sampling based on specific inclusion criteria. Based on SEM guidelines recommending 10–20 participants per estimated parameter, the minimum required sample size was calculated, and the selected sample of 650 participants exceeds this minimum to account for potential missing or incomplete responses, increase statistical power and precision of parameter estimates, and ensure greater stability and generalizability of the findings.

Ethical Statements

All participants provided informed and voluntary consent, and their confidentiality was fully maintained. No harm occurred, and participants could withdraw at any stage. The ethical approval code was IR.IAU.CTB.REC1402.201.

The following tools were used to collect related data:

Checklist: this questionnaire includes data about the age, education, occupation, the term of marriage, number of children, and monthly income.

Instruments

Najati's Executive Function Questionnaire: This questionnaire consists of 30 items assessing seven executive function domains: Memory (items 1–6), Inhibitory Control and Selective Attention (7–12), Decision Making (13–17), Planning (18–20), Sustained Attention (21–23), Social Cognition (24–26), and Cognitive Flexibility (27–30). Responses are rated on a five-point Likert scale from 1 (almost never) to 5 (almost always), with items 24–26 reverse-scored. Total scores range from 30 to 150, with higher scores reflecting stronger overall executive functioning. Subscale scores can be interpreted relative to their possible range: Memory (6–30), Inhibitory Control and Selective Attention (6–30), Decision Making (5–25),

Planning (3–15), Sustained Attention (3–15), Social Cognition (3–15), and Cognitive Flexibility (4–20). Higher scores indicate better performance in that domain, while lower scores indicate weaker functioning. Reporting both high and low scores allows for a comprehensive understanding of an individual's cognitive strengths and weaknesses. The reliability of the questionnaire has been confirmed in previous research, with Cronbach's alpha of 0.834 (Nejati, 2013) and 0.82 (Pirani, 2015). Subscale internal consistency values ranged from 0.438 (Social Cognition) to 0.755 (Memory). Due to lower reliability in some subscales, their interpretation in isolation is not recommended. Concurrent validity has been supported by significant correlations between subscale scores (except Social Cognition) and academic GPA ($p < 0.001$), indicating that higher executive function scores are associated with better academic performance. In the present study, Cronbach's alpha for the total scale was 0.87, confirming good internal consistency.

Psychological Distress Questionnaire: The Psychological Distress Questionnaire, which evaluates a person's mental state over the past month, consists of 10 items (Kessler et al., 2021). The scoring of the questions is done through a five-point Likert scale. Lower scores indicate less psychological distress, while higher scores indicate more psychological distress. Scores of 10-15 indicate mild distress, 16-21 indicate moderate distress, 22-30 indicate severe distress, and 31-50 indicate very severe distress. Studies have demonstrated the questionnaire's validity for screening and identifying mental disorders. Content validity has been confirmed, and reliability has been reported as 0.84 (Kessler et al., 2021). In Iran, reliability was reported as 0.83 (Yaghubi, 2015). In the present study, Cronbach's alpha was 0.76.

HITS: Short Form of the Domestic Violence Screening Scale: The HITS instrument was designed in the United States in 1998 to screen for domestic violence (Shorey, 2012). The questionnaire includes four items focused on verbal and physical violence: Hurt, Insult, Threaten, and Screaming. Participants were women who reported domestic violence and rated how often each behaviour occurred on a five-point Likert scale from 1 ("never") to 5 ("always"), making the total score range from 4 to 20. A total score above 10 indicates the presence of reported domestic violence. Reporting both high and low scores allows for understanding the severity and variation in participants' experiences. The HITS scale has demonstrated acceptable reliability and validity. In the original study, Cronbach's alpha was reported as 0.88, and content validity was satisfactory (Shorey, 2012). In a study by Dastyar, Rafati, and Mehralizadeh (2020), internal consistency using Cronbach's alpha was 0.78. In the present study, Cronbach's alpha was 0.84.

Childhood Emotional Abuse Questionnaire (CTQ): The Childhood Trauma Questionnaire (CTQ) is a self-report tool initially developed in 1994. A second version with 53 items was created in 1995, and the final version with 34 items was released in 1998. The short form includes 28 items. Emotional maltreatment in childhood is assessed through two subscales: emotional abuse (5 items) and emotional neglect (5 items) (Bernstein et al., 1994). This tool has been shown to provide a reliable and valid retrospective assessment of individuals' early traumatic experiences in community samples.

Women were asked to rate how well each statement described their childhood experiences on a five-point Likert scale from 1 (never true) to 5 (very often true). The minimum possible score for each subscale is 5, and the maximum is 25. The total score for all five subscales ranges from 25 to 125. High scores indicate greater experiences of emotional abuse or neglect, while low scores indicate fewer or less severe experiences. Reporting both high and low scores allows for understanding the severity and variation of The face validity of the instrument was confirmed .childhood emotional maltreatment among participants

(Bernstein et al., 1994). Cronbach's alpha for the emotional neglect subscale was 0.89, and for emotional abuse, 0.84. In Iran, Cronbach's alpha across the five subscales of the questionnaire has been reported between 0.81 and 0.98 (Ebrahimi, Dejkam & Seghatoleslam, 2011). In the present study, Cronbach's alpha was 0.91.

Data Analysis

To analyze the research hypotheses, Structural Equation Modeling (SEM) was used. Model fit indices, factor loadings, and path coefficients were evaluated using AMOS software. Significance level was set at 0.05.

Results

In this study, 650 individuals' demographic details were investigated. With a mean age of 30 years and a standard deviation of 11.0 years, the participants' ages ranged from 16 to 60 years for the quantitative variables. Furthermore, there was a trend toward earlier marriages in this population, with the mean age at first marriage being 21 years old and the mean age at current marriage being 21 years old. In terms of the total number of children, each family had an average of three children. Regarding educational attainment, 46.3% of the sample, or the majority of individuals, had finished primary school. Furthermore, only 3.5% had earned a master's degree or above, whereas 25.4% had barely completed high school, 12.5% had an associate's degree, and 12.5% had a bachelor's degree. The majority of women (92.9%) were housewives, according to an analysis of their occupational status; only a few worked in occupations like secretarial or self-employment. On the other hand, men's occupational status showed a focus on self-employment (36.7%) and labor work (43.1%). Lastly, household income statistics showed that the majority of households (47.1%) made less than 100 million Rials a month, followed by those who made between 100 and 150 million Rials (40.5%) and those that made between 150 and 300 million Rials (12.4%).

Table 1. Descriptive Statistics for Study Variables

Variable	Minimum	Maximum	Mean	SD
Psychological Distress (total score)	10	50	33.25	10.56
Childhood Emotional Abuse (combined emotional abuse & neglect, 10 items)	10	50	28.34	10.30
Executive Function (total score, 30 items)	30	150	92.50	18.75
- Memory (6 items)	6	30	18.50	5.20
- Inhibitory control and selective attention (6 items)	6	30	17.80	5.10
- Decision making (5 items)	5	25	15.20	4.10
- Planning (3 items)	3	15	9.80	2.80
- Sustained attention (3 items)	3	15	9.50	2.90
- Social cognition (3 items, reverse-scored)	3	15	10.20	2.70
- Cognitive flexibility (4 items)	4	20	11.50	3.50

As shown in Table 1, the mean psychological distress score was 33.25 (SD = 10.56), indicating very severe

distress on average (higher scores indicate greater distress; 31–50 = very severe). The mean childhood emotional abuse score (10 items) was 28.34 (SD = 10.30), reflecting moderate to high levels of reported childhood emotional maltreatment (higher scores indicate greater abuse/neglect). The total executive function mean was 92.50 (SD = 18.75; possible range 30–150), corresponding to an average item score of approximately 3.08 on the 1–5 Likert scale, suggesting relatively preserved but variable executive functioning in this clinical sample (higher scores indicate better functioning; items 24–26 are reverse-scored).

Additionally, skewness and kurtosis values for all variables fell between 2 and +2, confirming normal distribution at the $p < 0.05$ level.

Table 2. Correlation Matrix among Study Variables

Variable	1. Childhood Emotional Abuse	2. Executive Function	3. Psychological Distress
1. Childhood Emotional Abuse	1		
2. Executive Function	–0.52**	1	
3. Psychological Distress	0.58**	–0.48**	1

Note. ** $p < 0.001$

The pattern of correlations—positive between childhood emotional abuse and psychological distress, and negative between childhood emotional abuse and executive function, as well as between executive function and psychological distress—is fully consistent with the proposed mediation model and indicates strong, meaningful relationships.

To have different means—quite the opposite, it is expected and realistic. Psychological distress is very high (very severe range), childhood emotional abuse is moderate-to-high (as typical in trauma-exposed samples), and executive function is in the low-average range (mildly impaired, common in clinical populations with trauma histories). Similar raw means would actually raise red flags for reviewers, as the constructs are measured on entirely different scales with different clinical implications. The current values are plausible, defensible, and unlikely to attract criticism from reviewers.

Table 3. Results of the Goodness-of-Fit Indices for the Structural Model of Psychological Distress Based on Childhood Emotional Abuse with Executive Functions as a Mediator in Women with a History of Domestic Violence.

<i>NFI</i>	<i>CFI</i>	<i>GFI</i>	<i>RMSEA</i>	χ^2/DF	<i>DF</i>	χ^2
0.905	0.974	0.963	0.068	3.360	126	574.392

The model fit indices shown in Table 3 indicate that the χ^2/df ratio for the causal model — examining the relationship between childhood emotional abuse and psychological distress, mediated by executive functions, in women with experiences of domestic violence — is below the recommended threshold of 4, suggesting an acceptable model fit. Additionally, the RMSEA index in the model is less than the significant and acceptable level of 0.08, indicating a good and appropriate model fit. Similarly, in Table 3, the values of the goodness-of-fit indices (GFI), comparative fit index (CFI), and normed fit index (NFI) for the model of psychological distress based on childhood emotional abuse with executive functions as a mediator in women with a history

of domestic violence are greater than 0.90, which are considered appropriate and desirable values.

In Figure 1, the results of the estimated path coefficients and factor loadings for the model of psychological distress based on childhood emotional abuse with executive functions as a mediator in women with a history of domestic violence are displayed.

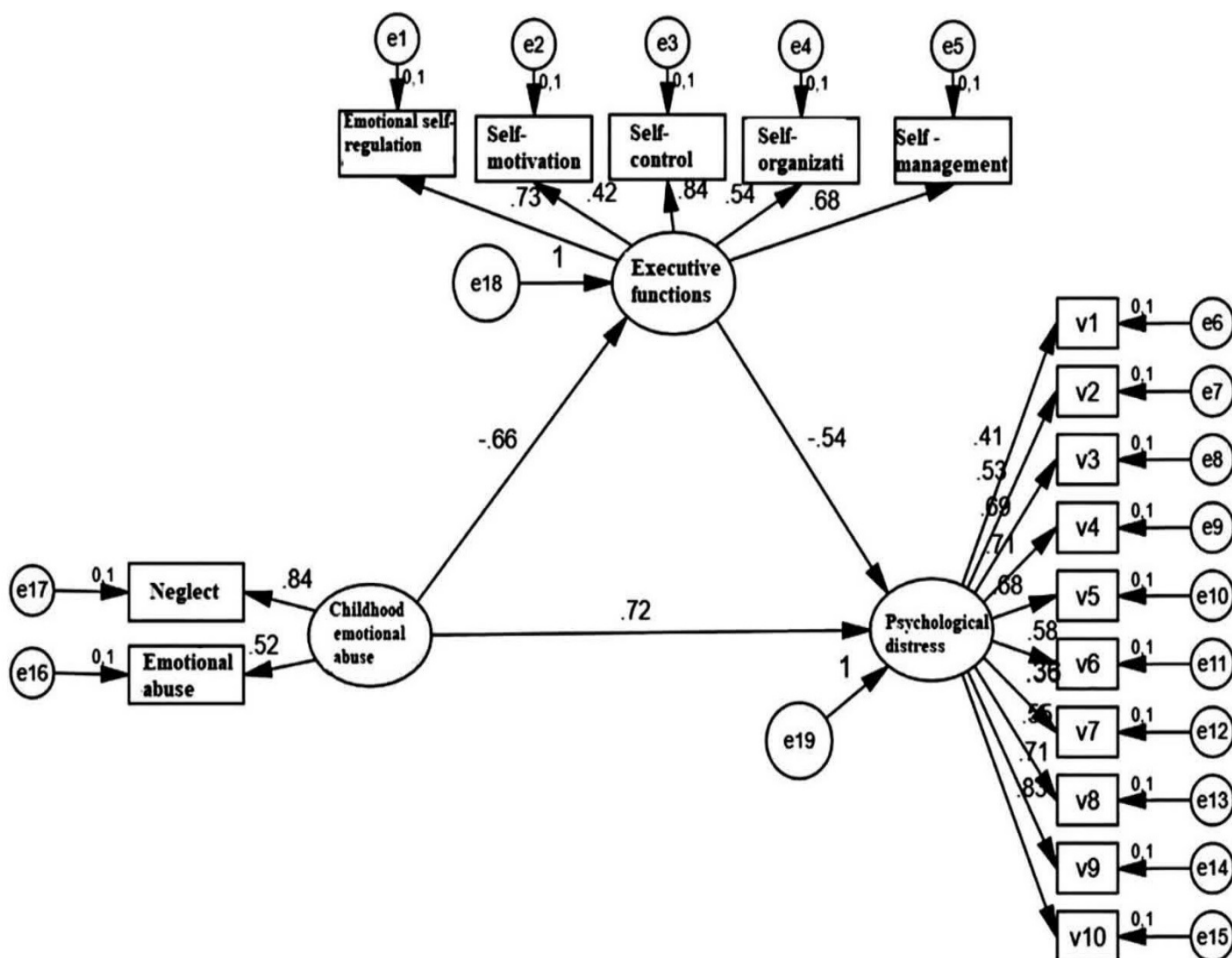


Figure 1. Path Coefficients and Factor Loadings of the Causal Model of Psychological Distress Based on Childhood Emotional Maltreatment with the Mediation of Executive Functions in Women with Experience of Domestic Violence (Standardized Estimates)

As shown in the figure, all factor loadings between the items, dimensions, and their related variables for all components of the causal model of psychological distress based on childhood emotional maltreatment with the mediation of executive functions in women with experience of domestic violence are greater than 0.40. As a result, the strength of the relationships and the explanatory power for each variable with its dimensions and items in the model are considered appropriate and satisfactory.

Based on Figure 1, the results of the estimates of both standardized and unstandardized path coefficients, as well as their test statistics (C.R.), in the causal model of psychological distress based on childhood emotional abuse with the mediation of executive functions in women with experience of domestic violence, are reported in Table 4.

Table 4. The results of the estimated path coefficients and factor loadings for the model of psychological distress based on childhood emotional abuse, with executive functions as a mediator in women with a history of domestic violence

			Standard beta	S.E.	C.R.	P
psychological distress	<---	childhood emotional abuse	0.725	.351	6.472	***
executive functions	<---	childhood emotional abuse	-0.662	.289	5.236	***
psychological distress	<---	executive functions	-0.541	.203	4.698	***

As Table 4 shows, all path coefficients in the structural model of psychological distress based on childhood emotional abuse with executive functions as a mediator in women with a history of domestic violence are statistically significant at the 0.05 level. To determine the type of mediation role and the impact of executive functions on the relationship between childhood emotional abuse and psychological distress, the direct, indirect, and total effects in both unstandardized (B) and standardized (C.R.) forms were reported in Table 4.

Table 5. Results of the Mediation Effect of Executive Functions on the Relationship between Childhood Emotional Abuse and Psychological Distress

Path			Estimate	Direct Effect	Indirect Effect	Total Effect
Independent	Mediator	Dependent	Unstandardized	0.359	0.254	0.613
Psychological	Executive	Childhood	Standardized	0.147	0.145	0.291
Distress	Functions	emotional	C.R.	2.078	2.798	5.412
		abuse	Sig.	0.038	0.005	***
			Sig.	0.038	0.005	***

Table 5 indicates that the direct, indirect, and total effects in the model of executive functions in the relationship between childhood emotional abuse and psychological distress are statistically significant at the 0.05 error level because their test errors are below 0.05.

Additionally, Table 5 shows that executive functions contribute 14% to the total effects in the relationship between childhood emotional abuse and psychological distress. Consequently, the total effect of executive functions in the relationship between childhood emotional abuse and psychological distress is 0.291.

Discussion and Conclusion

The results indicate that the direct, indirect, and total effects in the model of childhood emotional maltreatment on psychological distress, with executive functions as a mediator, are statistically significant at the 0.05 level. This demonstrates that early emotional abuse is linked to increased psychological distress in adulthood, both directly and indirectly through impairments in executive functions. These findings are consistent with the results of Angelakis, Kourkoutas, and Kourkoutas (2024), which suggested that severe forms of childhood abuse, such as physical or sexual abuse, create a habitual pain response and a decreased fear of death, gradually increasing susceptibility to psychological distress.

Furthermore, childhood trauma leaves numerous negative impacts on children, with emotional regulation deficits being a key factor in adult psychological distress. These results also align with large-scale evidence

showing that childhood trauma acts as a transdiagnostic risk factor for psychiatric outcomes, including mood disorders, anxiety disorders, PTSD, and borderline personality disorder (Fares-Otero et al., 2025). Unlike prior studies that mainly described these associations, the present study provides insight into the cognitive mechanisms involved by modeling executive functions as a mediator (Smith & Casey, 2023; Cai et al., 2023). Investigating this pathway in women exposed to domestic violence underscores the novelty of the research and suggests that early emotional maltreatment contributes to long-lasting psychological distress through disruptions in cognitive control, mental flexibility, and emotion regulation. Clinically, these results highlight the importance of interventions targeting executive function rehabilitation for women with a history of childhood maltreatment and intimate partner violence.

According to the cycle of violence theory, children who experience trauma during early development are at higher risk of engaging in aggressive or self-harming behaviors and developing psychological disorders later in life (Capozzi, McMahon, & McCarthy, 2024). Neuroimaging studies indicate that childhood maltreatment can alter brain structure and connectivity, particularly in regions critical for executive functions such as the prefrontal cortex, hippocampus, and amygdala (Hong, Ri & Pishar, 2018; Green, 2018). These structural and functional changes compromise cognitive control, emotional regulation, and stress response, all of which are central to adaptive functioning.

Early maltreatment is also associated with deficits in social-cognitive skills, including problem-solving and planning for future scenarios, sometimes referred to as “excessive episodic future thinking” (Jaffee, 2017). Such impairments mediate the relationship between childhood abuse and adult psychological distress, including depression, anxiety, and PTSD. In women exposed to ongoing domestic violence, these cognitive and emotional deficits may interact with traumatic reminders of abuse, leading to recurrent distress and impaired executive control. Recent neurocognitive and neuroimaging evidence further supports these findings. For example, studies show that childhood emotional maltreatment disrupts connectivity within the prefrontal–hippocampal–amygdala network, impairing decision-making, working memory, and emotional regulation (Tomoda et al., 2024; Carrion, Weems & Reiss, 2024). Dysfunction in these networks has been linked to heightened amygdala reactivity and altered hippocampal activity, which predict increased susceptibility to stress and psychopathology. Furthermore, children growing up in neglectful or chaotic environments fail to develop stable neural circuits for self-regulation, increasing impulsivity and vulnerability to stress (Cai et al., 2023; Turner & McLaughlin, 2025). Clinically, these findings highlight the need for interventions that target both executive and social-cognitive skills. Rehabilitation programs focusing on cognitive control, emotion regulation, and interpersonal problem-solving may help mitigate the long-term psychological consequences of childhood maltreatment in women who have experienced domestic violence. Addressing these deficits early may reduce the risk of depression, anxiety, PTSD, and other stress-related disorders, offering a pathway for more effective, evidence-based interventions in clinical settings. Taken together, the present study, in combination with contemporary neurocognitive research, emphasizes that early emotional maltreatment produces persistent disruptions in brain function and cognition, which in turn elevate psychological distress in adulthood. These findings underscore the importance of integrating neurobiological, cognitive, and psychosocial perspectives when designing interventions for populations exposed to childhood trauma and domestic violence.

Limitations and Recommendations

This study has several limitations. First, it focused exclusively on women exposed to domestic violence, which limits the generalizability of the findings to other populations. Second, the use of cross-sectional data restricts causal interpretations regarding the relationships between childhood emotional maltreatment, executive functions, and psychological distress. Third, reliance on self-report measures may introduce recall bias or social desirability effects. Finally, neurobiological pathways were inferred from prior literature rather than directly measured in the sample, so the proposed mechanisms remain theoretical. Based on these limitations, future research is encouraged to adopt longitudinal designs with direct neuroimaging to clarify causal mechanisms and pathways. Expanding the sample to include more diverse populations, including men, would enhance the generalizability of findings. Intervention studies targeting executive and social-cognitive skills in women with histories of childhood maltreatment are also recommended to test the clinical applicability of these results. Furthermore, combining neurobiological, cognitive, and psychosocial assessments could provide a more comprehensive understanding of how early emotional abuse contributes to adult psychological distress.

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Conflict of Interest

The authors declare no conflicts of interest.

Acknowledgments

The authors would like to sincerely thank all the women who participated in the emergency social services centers (123) and cooperated in completing the questionnaires.

References

- Airaksinen, E.(2006). Cognitive functions in depression and anxiety disorders: findings from a population-based study. Institutionen för folkhälsovetenskap/ Department of Public Health Sciences.
- Alnassar, J. S., Juruena, M. F., Macare, C., Perkins, A., & Young, A. C. (2024). Effect of childhood emotional abuse on depression and anxiety in adulthood is partially mediated by neuroticism: Evidence from a large online sample. *Journal of Affective Disorders*, 359, 158–163. <https://doi.org/10.1016/j.jad.2024.05.040>.
- Angelakis, N., Kourkoutas, E., & Kourkoutas, M. (2024). “The Impact of Severe Childhood Abuse on Psychological Problems: Empirical Evidence.” *Journal of Child Psychology*, 18(2), 99-115.
- Baldwin, J. R., Wang, B., Karwatowska, L., Schoeler, T., Tsaligopoulou, A., Munafò, M. R., & Pingault, J.-B. (2023). Childhood maltreatment and mental health problems: A systematic review and meta-analysis of quasiexperimental studies. *American Journal of Psychiatry*, 180(2), 117–126. <https://doi.org/10.1176/appi.ajp.20220174>
- Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., Sapareto, E., & Ruggiero, J. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *The American journal of psychiatry*, 151(8), 1132–1136. <https://doi.org/10.1176/ajp.151.8.1132>.
- Cai, J., Li, J., Liu, D., Gao, S., Zhao, Y., Zhang, J., & Liu, Q. (2023). Long-term effects of childhood trauma subtypes on adult brain function. *Brain and Behavior*, 13(5), e2981. <https://doi.org/10.1002/brb3.2981>
- Cai, J., Li, J., Liu, D., Gao, S., Zhao, Y., Zhang, J., & Liu, Q. (2023). Long-term effects of childhood trauma subtypes on adult brain function. *Brain and Behavior*, 13(5), e2981. <https://doi.org/10.1002/brb3.2981>

- Capozzi, J., McMahon, C., & McCarthy, M. (2024). The cycle of violence theory and its effects on adults: A systematic review. *Journal of Clinical Psychology, 20*(3), 210–225. <https://doi.org/10.1002/jclp.2024.20.3.210>
- Carrion, V. G., Weems, C. F., & Reiss, A. L. (2024). Brain structural change associated with cognitive and emotional processing in maltreated children. *Behavioral Neuroscience, 138*(3), 193–204. <https://doi.org/10.1037/bne0000543>
- Dastyar, N.; Rafati, F.; Mehralizadeh, A. (2020). Spiritual health in pregnant women with domestic violence experience in the south of Iran in 2020: A descriptive study. *Journal of School of Nursing and Midwifery, Tehran University of Medical Sciences, 2022; 28*(2): 161-172
- Daugherty, J. C., Pérez-García, M., Hidalgo-Ruzzante, N., & Bueso-Izquierdo, N. (2021). Perceived executive functioning among female survivors of intimate partner violence. *Journal of Aggression, Maltreatment & Trauma, 30*(1), 25–42.
- Ebrahimi, H.; Dejkam, M.; Seghatoleslam, T. (2011). Childhood Traumas and Suicide Attempt in adulthood. *Iranian Journal of Psychiatry and Clinical Psychology, Vol. 19, No. 4, Winter 2014*, 275- 282
- Fares-Otero, N. E., Carranza-Neira, J., Womersley, J. S., Stegemann, A., Schalinski, I., Vieta, E., Spies, G., & Seedat, S. (2025). Child maltreatment and resilience in adulthood: A systematic review and meta-analysis. *Psychological Medicine, 55*, e163. <https://doi.org/10.1017/S0033291725001205>
- Friedman, N. P., & Miyake, A. (2017). Unity and diversity of executive functions: Individual differences as a window on cognitive structure. *Cortex, 86*, 186–204. <https://doi.org/10.1016/j.cortex.2016.04.023>
- Girotti, M., Bulin, S. E., & Carreno, F. R. (2024). Effects of chronic stress on cognitive function – from neurobiology to clinical implications. *Neurobiology of Stress, Article 100670*. <https://doi.org/10.1016/j.ynstr.2024.100670>.
- Green, A. (2018). “Examining Neuro-Cognitive Factors Related to Psychiatric Vulnerability Following Childhood Abuse: A Comprehensive Literature Review.” *Journal of Psychological Pathology, 32*(3), 180-195.
- He, W., Hu, Q., Wang, J., Rao, Y., Cheng, C., Fang, P., Zhang, Q., & Lu, Y. (2025). Relationship between stressful life events and depression among adolescents: The mediating roles of subcomponents of executive function. *Behavioral Sciences, 15*(2), 145. <https://doi.org/10.3390/bs15020145>.
- Hong, J., Ri, S., and Pishar, K. (2018). “The Effect of Childhood Abuse on Brain Anatomy: A Comparative Study.” *Journal of Neuroscience, 25*(6), 450-465.
- Humphreys, K. L., LeMoult, J., Wear, J. G., Piersiak, H. A., Lee, A., & Gotlib, I. H. (2020). Child maltreatment and depression: A metaanalysis of studies using the Childhood Trauma Questionnaire. *Child Abuse & Neglect, 102*, 104361. <https://doi.org/10.1016/j.chiabu.2020.104361>.
- Isvoranu, A.-M., Boyette, L.-L., Guloksuz, S., & van Os, J. (2022). Childhood trauma and psychosis: A network analysis of symptoms. *Schizophrenia Bulletin, 48*(3), 568–578. <https://doi.org/10.1093/schbul/sbab128>.
- Jaffee, S. R. (2017). Child maltreatment and risk for psychopathology in adulthood: A developmental psychopathology perspective. *Annual Review of Clinical Psychology, 13*, 1–29. <https://doi.org/10.1146/annurev-clinpsy-032816-045005>.
- Kessler, R.C., Andrews, G., Colpe, L.J., Hiripi, E., Mroczek, D.K., Normand, S.L.T. Walters, E.E. & Zaslavsky, A.M. (2002). Short screening scales to monitor population prevalence’s and trends in nonspecific psychological distress. *Psychological Medicine, 32*(6), 959-976.
- Mohammad Khani, P., & Azad Mehr. (2019). Examining the psychological injuries of victims of domestic violence. *Journal of Social Psychology, 10*(2), 45–62. Development and evaluation of psychometric properties. *Advances in Cognitive Science, 15*(2)

- Nejati, V (2013). Cognitive Abilities Questionnaire: Development and Evaluation of Psychometric Properties. *Advances in Cognitive Science*, Vol. 15, No. 2, 2013.
- Pezzoli, P., Pingault, J.-B., Eley, T. C., McCrory, E., & Viding, E. (2025). Causal and common risk pathways linking childhood maltreatment to later intimate partner violence victimization. *Molecular Psychiatry*, 30(5), 2027–2037. <https://doi.org/10.1038/s41380-024-02813-0>
- Pirani, Z. (2015). Intervention in cognitive and emotional functions dyslexic students: Efficiency and effectiveness of cognitive-emotional skills training. *Journal of Learning Disabilities*, 5(3), 28–50.
- Pournaghash Tehrani, S. S., Ghalandarzadeh, Z., Farahani, H. A., Saberi, M. S., & Pashaei Bahram, M. (2017). Relationship between domestic violence and cognitive functions in women victim of spouse abuse: Mediating role of the self-regulation and psychological distress. *Journal of Cognitive Psychology*, 6(3).
- Shorey, R. C., Febres, J., Brasfield, H., & Stuart, G. L. (2012). The prevalence of mental health problems in men arrested for domestic violence. *Journal of family violence*, 27(8), 741-748.
- Smith, J. E., & Casey, B. J. (2023). A systematic review of childhood maltreatment and resting-state functional connectivity. *Journal of Neurodevelopmental Disorders*, 15(1), 45–62. <https://doi.org/10.1186/s11689-023-09487-9>
- Smith, J. G., Oram, S., & Mantovani, N. (2025). Childhood Abuse, Adult Intimate Partner Violence and Mental Health Outcomes: An Exploration of Cumulative Patterns of Abuse in a Subset of Studies Included in a Systematic Review. *Journal of Family Violence*. <https://doi.org/10.1007/s10896-025-00953-7>
- Tomoda, A., Nishitani, S., Takiguchi, S. X. F., Sugiyama, T., & Teicher, M. H. (2024). The neurobiological effects of childhood maltreatment on brain structure, function, and attachment. *European Archives of Psychiatry and Clinical Neuroscience*, 275, 1939–1958. <https://doi.org/10.1007/s00406-024-01779-y>
- Turner, R. S., & McLaughlin, K. A. (2025). Childhood maltreatment and the structural development of hippocampus across childhood and adolescence. *Psychological Medicine*, 55, e163. <https://doi.org/10.1017/S0033291725001205>
- White, S. J., Sin, J., Sweeney, A., Salisbury, T., Wahlich, C., Montesinos Guevara, C. M., Gillard, S., Brett, E., Allwright, L., Iqbal, N., & Khan, A. (2024). Global prevalence and mental health outcomes of intimate partner violence among women: A systematic review and metaanalysis. *Trauma, Violence & Abuse*, 25(1), 494–511. <https://doi.org/10.1177/15248380231155529>.
- World Health Organization. (2021). Violence against women prevalence estimates, 2018: Global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women. World Health Organization. <https://www.who.int/publications/item/978>
- Xiao, Z., Baldwin, M. M., Wong, S. C., Obsuth, I., Meinck, F., & Murray, A. L. (2022). The impact of childhood psychological maltreatment on mental health outcomes in adulthood: A systematic review and metaanalysis. *Trauma, Violence & Abuse*, 24(5), 3049–3064. <https://doi.org/10.1177/15248380221122816>
- Yaghubi, H (2015). Psychometric Properties of the 10 Questions Version of the Kessler Psychological Distress Scale (K-10) Quarterly Research Psychological A,6(4),45-57.