



# Depression and Suicidality in Adolescence: The Impact of Maternal Depression and Early Childhood Neglect

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## Abstract

The current study explores the impact of maternal depression and early childhood neglect on depression and suicidal ideation in adolescence. LONGSCAN data was used to assess adolescents and their caregivers (N=805). The sample was predominantly Black or African American. The Center for Epidemiological Studies–Depression (CES-D) scale was used to assess maternal depression. Caregivers completed the depression subscale and a categorical indicator of suicidality from the Child Behavior Checklist (CBCL). Adolescents completed the Trauma Symptom Checklist for Children. Neglect was confirmed from Child Protective Services data. When T-scores from the CBCL and TSC (ages 12 and 16) were treated as the outcome measures, MANCOVA was run with neglect as the independent variable and maternal depression as a covariate. When suicidal ideation served as the outcome, the effects of neglect and maternal depression were examined with logistic regression when suicidal ideation was the outcome. The effects of neglect on adolescent depression and suicidal ideation were significantly higher in those who were neglected. A significant positive relationship between maternal depression and adolescent depression at age 16 was revealed by caregiver report. Significant effects were also yielded between maternal depression and suicidal ideation, when children aged 12 assessed themselves. For every point higher on the (CES-D), the likelihood of suicidal ideation increased by 5%. These findings endorse that early neglect and maternal depression can impede the attainment of stage-salient psychosocial developmental goals, increasing the likelihood of adolescent depression and suicidal ideation. Reports by caregivers and adolescents are not always consistent, emphasizing the importance of risk reduction through psychoeducation and routine screening for neglect, depression and suicidal ideation in adolescents.

**Keywords:** Maternal depression; Childhood neglect; Adolescent depression; Adolescent suicidal ideation.

## INTRODUCTION

Childhood maltreatment is a well-established risk factor for major depressive disorder. In addition, there is a high correlation between depression and other internalizing symptomology, such as suicidal ideation, in adolescence [1]. There is, however a dearth of research on the impact of maternal depression as a risk factor for adolescent depression and suicidality, when these teens were neglected in early childhood.

### The Link Between Neglect, Depression, and Suicidal Ideation in Adolescents

Suicide is the second leading cause of death among youth between the ages of 10–14 years and the third leading cause of death among individuals aged 15–24 years [2]. Epidemiological studies indicate a steady rise in suicide rates among children and adolescents, where the presence of depression and childhood maltreatment are risk factors for increased suicidal behaviors [3,4]. Depression was found to play a mediating role between childhood neglect and suicidality [5,6]. Also, symptoms of depression were positively associated with suicidal ideation intensity and severity [5].

Approximately 16.3% of children in the United States have experienced physical neglect, and 18.4% endured emotional neglect [7]. The consistent failure to meet a child's emotional or physical needs has been associated with negative developmental outcomes, including low self-esteem, an increase in maladaptive behaviors, and the potential to develop psychopathology including depression [8,9]. Children who have experienced neglect have more restricted social relationships, higher rates of cognitive deficit, and internalizing symptoms compared to other forms of abuse, indicating that neglect has a significant impact on a person's developmental trajectory [10]. The lack of sustained social connections has been hypothesized to impact language skill development in these children [10], making it more challenging for them to establish meaningful relationships and potentially more difficult for them to express their concerns. A shift in focus toward peer relations during adolescence makes this a vulnerable time in their development, and rejection during this stage increases the risk of developing internalizing behaviors [10]. Moreover, poor interpersonal dynamics and psychological disorders underpin the developmental relationship between child maltreatment and adolescent suicidal ideation [11].

Emotional development can also be disrupted due to neglect as secure relationships with significant others encourage the adoption of adaptive emotional regulation. Infants and children learn to self-regulate through interactions with receptive caregivers who provide a source of comfort. According to Tanzer and colleagues [10], children exposed to significant neglect tend to experience difficulties in recognizing emotions and utilize less socially acceptable emotional regulation skills.

A study conducted by Glickman and colleagues [8] determined that exposure to childhood emotional neglect was significantly associated with higher depressive symptoms in 18-year-olds compared to their counterparts who experienced no exposure. In addition, several meta-analyses have reiterated that individuals who experience child abuse or neglect are at an increased risk for depression and suicidality [12]. Additional research confirmed that childhood neglect enhanced the

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likelihood of suicidal attempts in young adults [13]. A longitudinal study by Kwok and Gu et al. [13], involving eighth and ninth graders in Hong Kong concluded that childhood neglect positively predicted suicidal ideation in adolescents. Of relevance is that Yroni and colleagues' study [14] yielded a strong association between suicidality and childhood physical neglect but did not find such a relationship with emotional neglect. Therefore, while the association between childhood maltreatment and these internalizing behaviors is evident, more research is needed to understand the influence and adverse impact of respective factors.

## The Impact of Maternal Depression on Child Depression and Suicidal Ideation

Maternal depression impacts 10–15% of women, adversely affecting parent-child relationships and overall household stability [15]. Children of depressed mothers face higher risks of social, emotional, behavioral, and neurological problems, including delayed cognitive and language development, insecure attachment, heightened negative emotions, and difficulty regulating affect [16]. These children therefore exhibit more internalizing and externalizing behaviors than children whose mothers are not depressed [17]. It is relevant to highlight the similarity in the potential manifestations of childhood neglect and maternal depression on the psychosocial development and functioning of the child.

Severity and chronicity of maternal depression are potentially important determinants in child outcomes [15]. Sawyer and colleagues et al. [16], noted that children are at an increased risk for adverse developmental outcomes when the mother's depressive symptoms persist for at least 6 months post-partum. Some studies indicate that emotional and behavioral issues begin to manifest as early as 2 years old, while others suggest that emotional and behavioral problems typically present in middle childhood or at age 11 years through adolescence, with internalizing problems being expressed between ages 16 to 18 years [18].

Research has linked maternal depression to an increased risk of suicidal ideation and attempts at a younger age among their offspring compared to children whose mothers were not depressed [19]. Similarly, a longitudinal study of Canadian youth demonstrated that children exposed to maternal depressive symptoms aged 0–10 years had 1.7-times increased rates of incidents and recurrences of suicidal ideation and 2.2-times higher rates of suicidal attempts compared to their non-exposed peers between 11 and 25 years [20].

Goodday and colleagues et al. [20], identified modifiers that potentially increase a child's risk for suicide, including the cumulative effect of maternal depression. Consistent with this finding, the Avon Longitudinal Study of Parents and Children assessed offspring suicidal ideation at age 11 and 16 years and the association between maternal depression symptoms over the first 11 years of the child's life [21]. Of the 5,613 child participants, 5% reported suicidal ideation at age 11 years.

Hammerton and colleagues et al. [21], noted that high risk of suicidal ideation in these children is associated with the chronicity and severity of the mother's symptoms, with mild symptoms posing a smaller risk. Family break-up and lack of social resources were identified as factors increasing depression severity in mothers and vulnerability in their offspring [20]. Some evidence suggests that improvement in maternal depression symptoms is associated with reduced risk of depression and suicidal behaviors in children [21]. Of the 4,588 adolescent participants, 15% reported suicidal ideation in the past year, with most of those reporting suicidal ideation being females

1. In a study by Levin and colleagues et al. [22], for caregivers with depression scores in the subclinical range, a one-unit score increase was significantly associated with a 0.43 increase in internalizing scores on the Child Behavior Checklist (CBCL) for preschool children who were high risk for maltreatment. It is relevant to note that this relationship was present on a continuum whereby an increase in the

caregivers' symptoms of depression were associated with an increase in the children's internalizing and externalizing behavior scores, across the full range of depressive symptom scores, including below the cut off score for clinical depression [22]. Although greater attention is being paid to childhood neglect and its influence on depression and suicidal ideation, a dearth of literature remains as to the impact of maternal depression in this context. The current study thus delves deeper into the relationship between maternal depression and the specific internalizing behaviors of depression and suicidal ideation in children who have been neglected.

## METHODS, RESULTS AND ANALYSIS

This study used data from LONGSCAN, a longitudinal database of children at high risk for abuse. The LONGSCAN cohort enrolled 1,354 children between age 4 and 18 years, and their caregivers [23]. Since the present investigation targeted data at ages 12 and 16, many cases were either lost to attrition or did not have the set of measures necessary to be included in the investigation. A final sample of  $N = 805$  was available for analysis. Children were predominantly Black or African American (54.5%) compared to other ethnic groups (25.1% White and 20.4% endorsing other). Similarly, caregivers were predominantly Black or African American (54.4%) compared to other ethnic groups (32.2% White and 13.4% endorsing other). The children were slightly more likely to be identified as female (51.8%) than as male (48.2%).

### Measures

Core variables under consideration included maternal depression, child depression, and child suicidality. Maternal depression was measured with the Center for Epidemiological Studies-Depression (CES-D) scale. The CES-D is a 20-item self- or interviewer-administered measure of current depressive symptoms in adults over the age of 18 years [24]. Though administered at several points, the Child Behavior Checklist (CBCL/4-18) was used in the current investigation to measure child depression at ages 12 and 16. The CBCL/4-18 is a widely used multi-axial empirically based standardized measure for child behavior [25] that was administered to the caregiver. T-scores from the depression sub-scale served as the measure of depression, and a categorical indicator of suicidality was derived from items indicating whether the child had expressed suicidal ideation at ages 12 and 16. Child depression and suicidality were also measured with the Trauma Symptom Checklist for Children (TSCC). The TSCC is administered to the child, and measures severity of posttraumatic stress and related psychological symptomatology (anxiety, depression, anger, dissociation) in children ages 8-16 years who have experienced traumatic events. In the current study, T-scores at ages 12 and 16 were targeted. The TSCC differed from the CBCL insofar as the child reported symptoms of depression and suicidality whereas the CBCL is administered to the caregiver. Neglect was derived from Child Protective Services (CPS) data noting whether no allegations of neglect between birth and age eight, allegations between birth and age four, and first allegations of neglect between ages four and eight were recorded.

### Analyses and Results

The analyses concerned the association between neglect, maternal depression, adolescent depression (CBCL, TSC) and suicidal ideation (CBCL, TSC) at ages 12 and 16. Two sets of analyses were performed. When T-scores from the CBCL and TSC (ages 12 and 16) were treated as the outcome measures (depression), Multivariate Analysis of Covariance (MANCOVA) was run, with the indicator of neglect serving as the independent variable and maternal depression serving as a covariate. A significant multivariate effect for neglect was obtained for the CBCL (caregiver report),  $\lambda = .967$ ,  $F(4, 924) = 3.91$ ,  $p = .004$ ,  $\eta^2 = .017$ , but not the TSC (child report) data,  $\lambda = .978$ ,  $F(4, 726) = 2.01$ ,  $p = .091$ ,  $\eta^2 = .011$  indicating that the onset of first neglect allegation was associated with CBCL scores across ages 12 and 16. With the CBCL data, the effects of



neglect were indicated by significantly higher scores in the neglect group than in the no neglect group.

A significant multivariate effect for maternal depression was also obtained with the CBCL,  $\lambda = .983$ ,  $F(2, 462) = 4.07$ ,  $p = .018$ ,  $\eta^2 = .017$ , but not with the TSC measures of depression,  $\lambda = .998$ ,  $F(2, 363) = 0.39$ ,  $p = .674$ ,  $\eta^2 = .002$ . When analyzed at separate ages, the effects of maternal depression were restricted to age 16,  $F(1, 463) = 7.87$ ,  $p = .005$ ,  $\eta^2 = .017$ . The effects at age 12 did not achieve significance,  $F(1, 463) = 3.26$ ,  $p = .072$ ,  $\eta^2 = .007$ . This finding indicated that levels of maternal depression were positively associated with adolescent depression, particularly at age 16, as measured by the CBCL.

When suicidal ideation served as the outcome, the effects of both neglect and maternal depression were examined with logistic regression because the outcome of interest was a dichotomous indicator of whether the child expressed suicidal ideation at either age 12 or age 16. No effects for neglect were found when suicidal ideation was derived from the CBCL. When suicidal ideation was derived from the TSC, significant effects were obtained at age 12. Echoing what was found with depression, suicidal ideation was significantly more likely among those neglected early (6.7%) than among those in the no neglect group (2.2%). The odds ratio (2.95) indicates, more specifically, that those neglected between birth and age 4 were almost three times as likely to express suicidal ideation at age 12 than those not neglected.

The effects of maternal depression were restricted to age 12 suicidal ideation as indicated by the TSC, Wald (1) = 10.93,  $p < .001$ . The odds ratio of 1.05 (1.02, 1.09) indicated, more specifically, that for every point higher on the measure of maternal depression (CES-D), the likelihood of age 12 suicidal ideation went up 5%. No effects were found at either age with the CBCL as indicator of suicidal ideation.

## DISCUSSION

Children who have been neglected are at increased risk for depression and suicidality. Maternal depression is also known to influence these internalizing behaviors in the children in their care. The purpose of this study was therefore to assess the impact of caregiver depression on depression and suicidality in adolescents who were neglected as children.

Findings of this research indicate that caregivers who experienced depression reported that adolescent depression and suicidality were significantly higher in the neglect group than the no neglect group. The adverse impact of neglect on these internalizing behaviors in these adolescents is therefore supported. The lack of statistical significance in adolescent-report can partially be explained by the decreased awareness of these neglected teens who have habituated to depressive symptomatology because they have seen, modeled and lived this behavior over an extended period. In addition, children who have been neglected tend to experience difficulties in recognizing emotions and have ineffective methods of emotional regulation [10], which in turn may limit their ability to identify depressive symptoms as being beyond the norm.

With caregiver assessment, there was a significant positive relationship between maternal depression and adolescent depression at age 16, but not at age 12. Again, these findings were not significant when adolescents evaluated their own depression. However, when the effects of neglect and maternal depression on suicidal ideation were assessed at ages 12 and 16, no effects for neglect were found according to caregiver report. Yet, significant effects were yielded when children aged 12 endorsed their own suicidal ideation. Reflecting the depression results, suicidal ideation was significantly more likely among children neglected early compared to those who were not neglected. In addition, those neglected between birth and age 4 were almost three times as likely to indicate suicidal ideation at age 12 than those not neglected.

Mistreatment including neglect during certain developmental stages

increases the likelihood of individuals developing psychopathology, including major depressive disorder [8]. Khan and colleagues et al. [26], argue that maltreatment during a specific stage is a more important predictor of outcomes than the severity, duration, or frequency of exposure. Erickson's psychosocial stages offer a theoretical developmental framework through which to understand the impact of neglect during these specific developmental periods [27]. Children at age 4 years begin to exert control over their environment as expressed by asking questions and interacting with peers. Early childhood neglect may result in unsuccessful resolution of critical developmental stages resulting in reduced trust, decreased initiative, feelings of guilt, an experience of inferiority, and difficulty with emotional expression [28]. Negative resolutions of these stages decrease the ability to effectively complete further stages of development, and adverse psychosocial outcomes including internalized behaviors may become more pronounced in adolescence.

At age 12, teens are beginning to enter Erikson's "Identity versus Role Confusion" stage of puberty, with resultant emotional fluctuations. Those exposed to maltreatment may exhibit depressive symptoms and suicidal ideation but lack the necessary skill development to effectively manage these complex emotions [29]. They may also have a decreased sense of self and a weak sense of identity [27], exacerbating helplessness. Difficulty with identity formation may limit cognitive exploration and the integration of beneficial beliefs and roles. The caregiver with potentially ineffective methods of coping with their own depression is the primary role-model for many of these teens. The teens' poorer social skills and difficulties with trust can culminate in isolation and an inability to establish an effective peer support system, making it less likely for them to have opportunities to learn from and model their peers [30]. When teens' identities should be positively influenced by social interactions [31], the absence of effective peer relationships inhibits identity formation.

At age 16, adolescents who have not resolved earlier critical stages of psychosocial development have identity confusion, a poor sense of self, and a continued inability to understanding their emotions [32]. This prevents these teens from effectively managing conflict and social relationships, increasing the likelihood of continued rejection by peers [31]. From a cognitive perspective, these adolescents do not learn effective impulse control strategies, and this, combined with emotional dysregulation culminates in the increased risk of depression and suicidality [10].

It is possible that caregivers were more able to identify depressive symptoms when the child was 16 years old rather than 12 years old because the presentation of the older adolescent was more like their own. At age 12, the younger teens were potentially less communicative and more socially isolated, making depressive symptoms less overt.

When considering Beck's theory of maternal depression [33], caregivers who have negative core beliefs about themselves may adversely impact the way they view their children [34]. Also, models of risk transmission between depressed caregivers and their children [35], may partially explain the association between maternal depression, and child depression as well as suicidal ideation. Interpersonal difficulties occurring because of depression may result in negative parent-child interactions [36]. Those living in high-risk households are more likely to experience depression, which in turn exacerbates internalized child behavior [37]. In addition, children whose mothers demonstrated persistent depressive symptoms were identified as having significantly more internalizing concerns than children whose parents did not report depressive symptoms [38]. In turn, children may model their caregivers' depressive behaviors [39]. Therefore, as a child is exposed to the caregiver's depressive symptoms, the child will learn this behavior, including helplessness, adversely impacting their own experience of depression and suicidal ideation. Thus, the ongoing interaction between the caregiver and child possibly exacerbates the depressive symptomatology for both.





The significant effects of maternal depression were restricted to age 12 suicidal ideation as indicated by child report, and for every point higher on the measure of maternal depression (CES-D), the likelihood of age 12 suicidal ideation went up 5%. Consistent with Levin and colleagues [22], an increase in caregivers' depressive symptoms, including below the clinical cutoff for depression, is significantly associated with an increase in children's internalizing behaviors. The current paper confirms this relationship for the specific internalizing behavior of suicidal ideation.

No significant effects were found at either age when the caregiver assessed the child's suicidal ideation. The caregivers may have habituated to their own chronic depression and helplessness. Also, although they were able to identify depressive symptoms in the children, they did not necessarily explicitly ask them about suicidal thoughts. A conversation about suicidality may entail deeper communication and trust than is present in these caregiver-child dyads. For caregivers, it may be psychologically threatening to consider that the child in their care would be thinking about suicide.

Limitations of this study include the use of archival data with self-report measures. In addition, the extrapolation of these findings is restricted to neglected children within a limited age range. Future research should assess these relationships within other high-risk populations, across broader age ranges, with consideration of gender differences.

From a clinical perspective, the findings of this study highlight the importance of primary care providers assessing mothers and caregivers of children for depressive symptoms. Children should be assessed for emotional neglect, symptoms of depression, and suicidal ideation. Individual symptoms should be qualitatively considered and documented to ascertain risk of suicide rather than only noting a diagnosis of depression or a clinical cutoff score such as the internalizing score on the CBCL.

Intervention, including educating youth and their caregivers on depression and suicidality, should be initiated as early as possible. Approaches to such intervention should include effective coping strategies, identifying warning signs and risk factors in high-risk populations, where chronic stressors could escalate distress and culminate in adverse outcomes such as increased suicidal ideation. This increase in awareness will enable these children and caregivers to proactively seek care in a confidential primary care setting.

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