Multidisciplinary International Journal of Research and Development

Volume: 04 / Issue: 06 / 2025 - Open Access - Website: www.mijrd.com - ISSN: 2583-0406

Examining the Stress Response in the Context of Emotional Neglect

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Abstract— Mental health issues have numerous effects on the body. The objective of this study was to assess the effect of emotional neglect and toxic stress on adolescents' stress coping capabilities in an attempt to develop effective treatments for anxiety disorders. The study tested the hypothesis that emotional neglect has a negative effect on the stress coping capability of an adolescent. 117 participants completed a survey asking them about their adolescent experiences and current stress and anxiety levels. The outcome was that adolescents lacking emotional support and parental or guardian bonding were much more likely to cope with and endure stress compared to those raised in supportive environments. In a society where there is a widespread mental health crisis, the connection between psychological trauma and the body's response serves to highlight the need for early intervention therapy and the creation of new medications to assist adolescents who have been emotionally neglected.

Keywords— toxic stress, emotional neglect, stress response, mental health.

I. INTRODUCTION

Emotional neglect refers to when a child is unable to thrive due to a lack of nurture and support and is an extremely common form of child maltreatment. A report from 2020 by the World Health Organization estimates that approximately 300 million children are subject to psychological harm each year. According to the National Society for the Prevention of Cruelty to Children (n.d.), children facing neglect show an array of symptoms, including substance abuse, mental health problems, or food theft (Chilton & Rabinowich, n.d.).

Negligent parents are generally disconnected and uninvolved in their child's life and are inattentive to their child's needs— both physical and emotional. These parents do not seek attachment—a close relationship—with their children. Secure attachment with a parent allows a child to gain control of their emotions and gain a sense of confidence. Not having this attachment can inhibit the way a child functions emotionally, socially, and physically.

Stress and Relaxation Responses

The body has three major stress responses: the positive response, the tolerable response, and the toxic response. Harvard University's Center on the Developing Child (2020) and Florida State University (n.d.) differentiate between the responses, asserting that the positive response is vital to development and includes a minor increase in cortisol levels and heart rate. A tolerable stress response occurs when the body is activated to a stronger degree due to major losses.

If the child has healthy relations with their guardians and a supportive environment, the response can be buffered, and the organs and brain can recover from the stress. The most damaging stress response—the toxic stress

response— occurs when a child faces persistent adversity, such as abuse, neglect, or violence without adult support. In 2017, the Nationwide Children's Hospital warned that this stress response disrupts the organ systems and the functions of the brain, leading to a higher risk of stress-related diseases such as heart disease and depression in adulthood.

The body generally has a relaxation response, in which the parasympathetic nervous system brings the heart rate and blood pressure down (Furness, 2008); most children facing neglect do not have an adequate relaxation response. Some children, however, are more resilient, meaning they can better adapt to adversity and neglect. This is determined by a child's relationships with others, quality of home life, and social support (Franke, 2014).

However, other children may be more vulnerable to the effects of neglect and be unable to cope with stress due to the lack of a support system. Children with abusive parents or maladaptive behaviors are more vulnerable to the negative effects of toxic stress.

Maternal affection and warmth appear to be a major factor in a child's ability to combat stress. Maternal warmth acts as a buffer to factors such as poverty or abuse (Chen, Miller, Kobor, & Cole, 2011). Low levels of parental warmth coupled with child abuse have been shown to cause higher health risks in neglected children as adults.

Conversely, parental warmth and affection during childhood were associated with fewer health risks in adulthood. Children in abusive environments generally require early therapeutic interventions to recover from the psychological trauma they endure. Children who do not receive help early on generally face Post Traumatic Stress Disorder (PTSD) in adulthood, which often leads to anger management issues, anxiety, and depression.

The purpose of this study was to pinpoint the external causes of stress and anxiety, and to apply the findings to create impactful interventions for children suffering from emotional neglect. The study aimed to analyze the relationship between the quality of a person's childhood and their ability to combat stress in their daily lives. The hypothesis asserted that emotional neglect coupled with toxic stress limits a child's ability to manage stress.

II. METHODS

Participants

Participants in this study included 117 academically successful high school students aged 14 to 18 from Orange County, California. Participants were recruited from merit-based service clubs including the National Honors Society and the Beta Club. Specific demographic information was not collected. Each participant voluntarily took part in the study and was aware of the purpose of the research.

Materials

All participants received informed consent forms outlining the purpose of the study, the benefits and risks of participation, and the terms of confidentiality and voluntary participation. Each participant's identity was kept anonymous throughout the study and contact information for the researchers was provided.

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Participants were only permitted to participate after submitting their consent form. They were allowed to stop participating in the study at any time and given the option of not answering questions that caused any discomfort. The consent form also outlined what the participant would be expected to do in the study.

An electronically distributed survey (see appendix) was used in the study as well; participants responded to a series of questions about their childhood using a Likert scale, responding with 'strongly agree,' 'agree,' 'neutral,' 'disagree,' 'strongly disagree,' or 'I do not wish to answer this question.'

The scale allowed for an analysis of the relation between a variety of home environments and stress levels and was designed in a manner to allow participants to best express the extent to which they agreed or disagreed with each statement about their home life. This data was later analyzed to understand the link between emotional neglect and the stress response.

Dependent Measures

The dependent variable in this study was the stress levels of each participant; the independent variable was the quality of home life (persistence of stress, quality of childhood, parental trust, familial support, and out of home care). A Likert scale was used to measure the dependent variable.

Procedure

Each participant received an identical survey. Questions were chosen based on the World Health Organization and Center for Disease Control's criteria on neglect and abuse. To differentiate between toxic stress and 'seasonal' stress, participants were asked to state whether the majority of their stress could be attributed to academics and school; this set aside participants with persistent stress and intermittent stress. Participants also answered questions on how close—or attached— they are with their caregivers.

Additionally, the survey included questions about how much each participant trusted their parents and whether they had fond memories of their childhood. The questions of parental presence, environmental stability, and economic stability allowed for an analysis of the correlations between the quality of home life and the stress response.

After each participant completed the survey, the data was analyzed for trends between neglect and the stress response using the correlation coefficient (R). The final step was to apply the data to expanding on mental illness work and creating new medications and effective interventions for children facing toxic stress.

III. RESULTS

Persistence of Stress

18.8% of participants reported being unable to manage their stress. These participants also reported signs of emotional neglect. The participants that reported difficulty in combatting stress also reported that their stress persisted year-long to no avail; meanwhile, those who did not struggle to combat stress reported that their stress was intermittent. The correlation coefficient for being able to manage stress and having persistent stress was R= –0.511, indicating a moderate negative correlation as shown in Figure 1 below.

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Volume: 04 / Issue: 06 / 2025 - Open Access - Website: www.mijrd.com - ISSN: 2583-0406

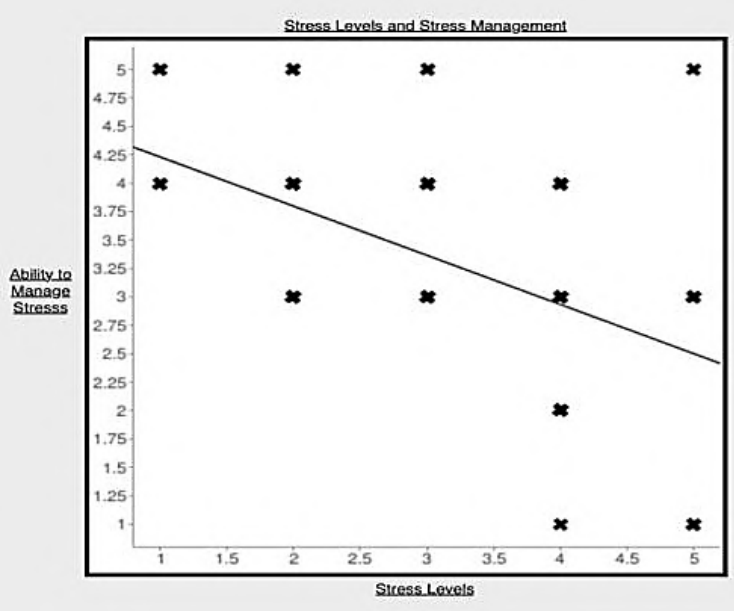

Figure 1: Persistence of Stress and Stress Management

Quality of Childhood

Some participants struggling to manage their stress found that they do not have fond memories of their childhood, while some participants who were able to manage stress reported having positive memories of their childhood. However, the R-value was a mere 0.044, indicating a weak, insignificant correlation between having negative childhood memories and being unable to combat stress. Figure 2 below displays that the two variables are unrelated.

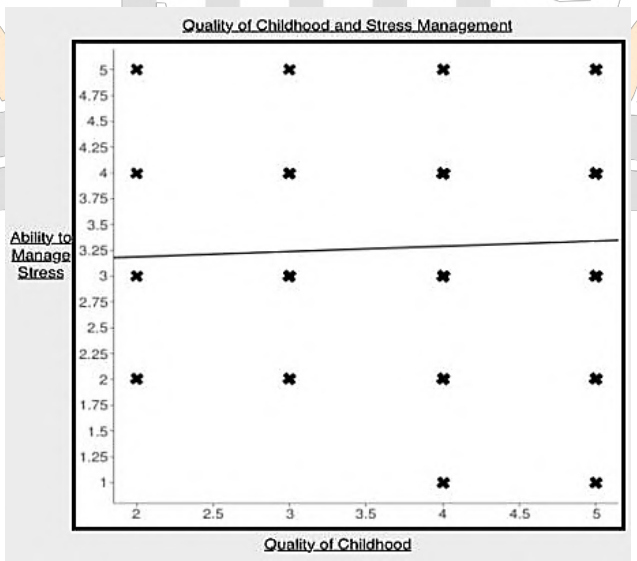

Figure 2: Quality of Childhood and Stress Management

Trust in Parents

Those who did not trust their parents experienced higher stress levels. The R-value for the correlation between being able to manage stress and trusting and confiding in parents was 0.417, showing a relatively weak positive

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correlation and supporting the claim that those who do not confide in their parents are more likely to struggle combating stress. Figure 3 shows that emotional neglect is correlated —to some degree— to difficulty combating stress.

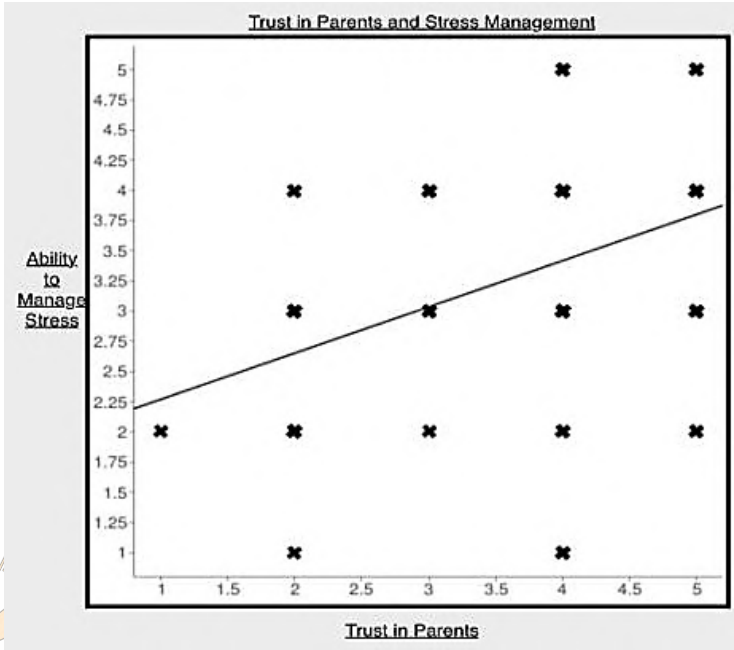

Figure 3: Stress Management and Trust in Parents

Familial Support

Participants who reported being able to combat stress also reported having adequate support from their parents to accomplish their goals, yielding an R-value of 0.502, indicating a moderate positive correlation between the two variables. Having parents that cater to a child's needs greatly improves the child's ability to manage their stress, as presented in Figure 4.

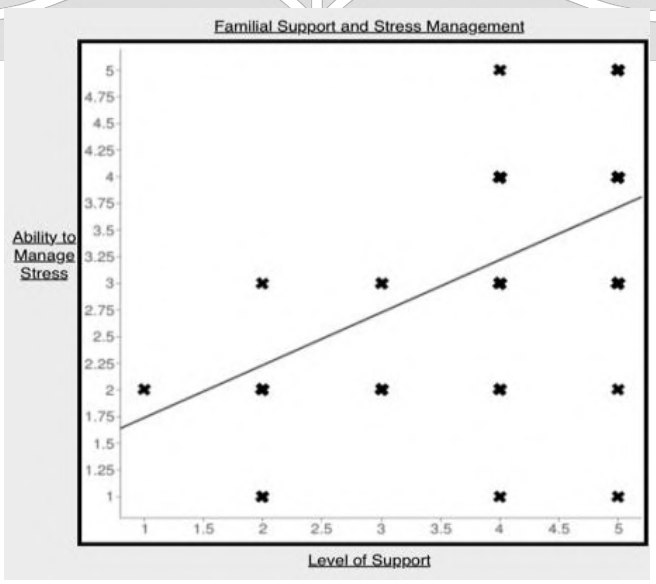

Figure 4: Stress Management and Levels of Familial Stress

Multidisciplinary International Journal of Research and Development

Volume: 04 / Issue: 06 / 2025 - Open Access - Website: www.mijrd.com - ISSN: 2583-0406

Extent of Out of Home ***Care***

While 86% of all participants reported that the majority of their stress stems from the school environment, 18.8% of those participants were unable to manage that stress — these were the same participants that reported signs of emotional neglect. The results also show that academic ability and intelligence are not a determining factor in the ability to combat stress; the participants in the study were members of academic-based invite clubs, showing that intelligence levels do not impact how a child can manage stress.

The data supports the hypothesis because those who had a nurturing environment reported that they could manage their stress and that their stress did not persist year-round. As shown in Figure 5, there appears to be a weak, insignificant relationship between having a nanny or attending daycare and the ability to combat stress (R= – 0.153). Parenting style and the home environment are often the most important factors in determining a child's ability to manage stress.

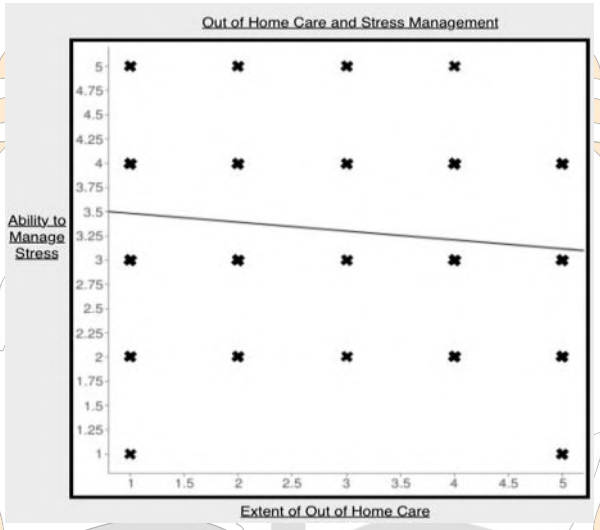

Figure 5: Stress Management and Extent of Out of Home Care

IV. DISCUSSION

The findings of this study support the initial hypothesis, as the data portrays a correlation between emotional neglect and an ineffective, decreased stress response. The results are additionally corroborated by the findings of psychologist Harry Harlow. Harlow's findings revolved around the concept of attachment: the emotional bond between a child and their parent or guardian. Harlow found that familiarity and comfort with a parent are vital to a child's development. The Association for Psychological Science (2018) found that deprivation of attachment leads to increased levels of anxiety, sensitivity to aggressive emotions, and an increased likelihood of health problems in the future.

The hypothesis is supported because those who reported having parents that show signs of emotional negligence and a lack of attachment found it more difficult to combat stress as they did not develop emotional bonds. Furthermore, Mary Ainsworth's research on attachment also showed that children who were unable to find comfort in their parent's presence were more likely to be anxious as they continued developing (Van Rosmalen, Van der Veer, & Van der Horst, 2015). Similarly, J. McVicker Hunt's research found that children who did not

receive enough care or attention were more 'vacant,' lacking skills present in children who receive ample care and support (Hunt, 1979).

Limitations

The study does, however, have a few limitations. The results depended on self-reported data due to the survey format and use of the Likert scale. There is a possibility that participants did not accurately report their feelings of stress. Additionally, stress stems from causes outside of emotional neglect; further analysis would be needed to discern whether emotional neglect was the root cause of the stress reported by the participants. The study also may not be representative of all high school students because participants were academically successful and from specific organizations. Performing the study again with a larger sample size and expanding the sample beyond the constraints of the two organizations can yield more useful information about the connection between emotional neglect and the ability to manage stress.

Health Problems

It is evident, based on the data, that those with unhealthy relations with their parents are more likely to suffer from anxiety disorders and struggle with managing their stress. It can be deduced that emotional neglect can be attributed to a hyperactive amygdala, which detects if a stimulus is threatening and releases cortisol. The increased cortisol levels affect activity in the brain. The amygdala is increasingly hyperactive when a child is unable to combat their stress, causing the child to feel the symptoms of stress and anxiety strongly. The prefrontal cortex of the brain, responsible for decision making and personality expression, will also be affected by the amygdala. The prefrontal cortex is especially sensitive to the elevation of chemicals in the brain caused by stress (Arnsten, 2009). The child is more prone to irrational behavior, poor decision-making, and negative self-expression due to the overly active amygdala. The changes in brain structure likely inhibit the brain's ability to communicate and function properly.

Children not suffering from neglect are more likely to be able to combat stress and less likely to suffer from stress-related diseases (heart disease, depression, anxiety) or substance abuse in adulthood. Children unable to trust their parents are more likely to respond more negatively to stress than children with healthy parental relations. They are also more likely to have lower self-esteem and struggle developing healthy relationships (World Health Organization, 2020). In adulthood, neglected children are at a higher risk for cognitive delays and impairments of executive function. Neglect alters the way the body develops the stress management system, and also disrupts the way the brain processes information, leading to an increase in anxiety or depression.

Stress Management

Generally, early therapeutic interventions with the aid of pediatricians and guardians to teach stress-management techniques and improve the social environment can help a child learn to manage stress (Franke, 2014). Interventions include screening for toxic stress factors such as poverty, substance abuse, and social isolation; social-emotional screening is also an interventional technique used by doctors to predict behavioral issues in children (Franke, 2014). Identifying children facing toxic stress is crucial so they may receive cognitive behavioral

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therapy, child-parent therapy, or learn relaxation techniques to build up resiliency. Additionally, a focus on the guardian has shown positive results. Home visits, parenting classes, improving access to social resources, and peer support are caregiver-based interventions proven beneficial in improving a child's home life (Franke, 2014). On a national scale, advocacy for financial support to implement more screening and interventions for toxic stress is vital.

If an intervention does not occur promptly, a child does not learn to manage stress effectively. Because neglect inhibits the ability of certain neurotransmitters to be released in the brain, finding a way to trigger the release of these neurotransmitters can potentially help children suffering from toxic stress (Schumann, Bauman, & Amaral, 2010). While neglect cannot be eliminated, the release of certain chemicals in the body can help in combating stress; creating a pharmaceutical drug with these substances can help those who did not receive early interventions in childhood. Oxytocin, released by the pituitary gland in the brain, reinforces attachment between children and their mothers (Levy et al., 2014). Neglected children do not experience the sensation this hormone releases and lack trusting behaviors. Propranolol is also helpful in reducing symptoms of stress; a beta-blocker, propranolol reduces physical signs of anxiety such as an increased heart rate or higher blood pressure and is often used to treat PTSD patients. Because many neglected children face PTSD in adulthood, propranolol can greatly aid in the stress response. It blocks the effects of both epinephrine and norepinephrine, thus reducing stress symptoms effectively (Levy et al., 2014). In addition, selective serotonin reuptake inhibitors (SSRIs) block serotonin reabsorption and allow for more serotonin activity. SSRIs are generally used to treat anxiety and depression, both common results of emotional neglect. The use of SSRIs stabilizes feelings of happiness and well-being (Levy et al., 2014). Inhibiting cortisol, a major stress hormone, can limit the effects of stress as well. Implementing early interventions and developing effective drugs are key to improving the stress response in neglected children.

V. CONCLUSION

Mental illness and stress and anxiety levels are increasing steadily in the United States; however, investing in mental health research can save lives and improve the quality of life for many suffering from mental health problems. Understanding both the causes and the effects of mental illnesses can allow mental health professionals to be better equipped to deal with the problem and overcome it before it begins to take effect in children. This research can help to pinpoint the causes of stress and anxiety, and to develop an effective drug to combat the negative effects of an emotionally neglectful upbringing. It can be used to understand how children are biologically affected by psychological trauma to better provide for kids from traumatic backgrounds. Increasing interventions and finding new drugs and treatments for stress and anxiety can help children manage toxic stress and anxiety, potentially reducing suicide and depression rates. Increased awareness for the effect neglect has on a child's brain can potentially decrease abusive parenting once the public understands the consequences of neglectful parenting styles.

Although the effects of psychological trauma and mental health cannot be seen by the naked eye, its effects are major towards a child's well-being and development. Mental health affects a person from childhood to adulthood; it affects how a person makes decisions and how they relate to others. Prioritizing mental health increases the

chances for early therapeutic intervention for treatment. This research serves to educate the public about the effects of emotional neglect and to find new techniques to support children facing toxic stress and neglect.

APPENDIX

The survey administered to participants is below. Participants responded to the following statements using the Likert scale, responding that they strongly agree, agree, disagree, strongly disagree, or are neutral.

5: strongly agree 4: agree 3: neutral 2: disagree 1: strongly disagree

1. My family went on vacations together often when I was a child.
2. My parents assisted me with my homework as needed.
3. I never worried about my safety or lack of food, shelter, or clothes.
4. I think I have the support needed to accomplish my goals.
5. There was usually a parent at home when I returned from school as a child.
6. I went to daycare/had a nanny as a child.
7. I feel I can trust and confide in my parents.
8. My parents are there for me when I need them.
9. My parents were protective of me as a child.
10. I look back fondly on my childhood.
11. I am stressed often.
12. Most of my stress comes from school.
13. I feel less stressed on breaks from school.
14. My stress persists year long.
15. I feel I can manage my stress well.

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