

Early Childhood Experiences and Adult Emotional and Psychological Well-being: Mediating Effects of Emotional Regulation and Support Access

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Abstract

Early childhood experiences play a fundamental role in shaping emotional development and long-term psychological functioning. While adverse childhood experiences (ACEs) increase vulnerability to mental health problems, positive childhood experiences (PCEs) may foster resilience and adaptive emotional functioning. This study examined the relationships among childhood experiences, emotional regulation, support access, and adult psychological well-being within an integrated developmental framework. A quantitative cross-sectional design was employed using data collected from 306 adults aged 18–45 years through standardized self-report measures. Data were analyzed using descriptive statistics, reliability analysis, Pearson correlation, hierarchical multiple regression, bootstrap mediation analysis, and moderation analysis. The findings demonstrated acceptable internal consistency across all study measures. Adverse childhood experiences were significantly associated with higher levels of anxiety, depression, and perceived stress, whereas positive childhood experiences positively predicted emotional regulation, resilience, sleep quality, and psychological well-being. Emotional regulation partially mediated the relationship between adverse childhood experiences and adult psychological distress, indicating that impaired emotional regulation represents an important mechanism linking childhood adversity with later mental health outcomes. Furthermore, support access significantly moderated the association between adverse childhood experiences and anxiety, suggesting that supportive resources mitigate the adverse psychological consequences of early-life adversity. The study highlights the complementary roles of developmental risk and protective factors in explaining adult psychological adjustment. These findings underscore the importance of trauma-informed interventions, resilience-building

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initiatives, and emotionally supportive environments for promoting lifelong mental health. The study contributes culturally relevant evidence from an Indian adult sample and offers practical implications for clinicians, educators, policymakers, and mental health practitioners.

Keywords: Early Childhood Experiences | Adverse Childhood Experiences | Emotional Regulation | Psychological Well-Being | Mental Health

I. INTRODUCTION

Mental health disorders constitute one of the most significant public health challenges of the twenty-first century, affecting individuals across cultures, age groups, and socioeconomic contexts. Approximately one in eight people worldwide experience a mental health condition, with anxiety and depressive disorders representing the leading contributors to years lived with disability (World Health Organization, 2023; Ryff, 2022). Although adult psychological distress is frequently attributed to contemporary occupational, interpersonal, or financial stressors, an expanding body of developmental research indicates that many emotional and psychological outcomes originate much earlier in life through experiences encountered during childhood. Early developmental environments influence emotional, cognitive, behavioural, and neurobiological processes that continue to shape psychological functioning across the lifespan (Dánielsdóttir et al., 2024; Madigan et al., 2023; Bornstein, 2022; Center on the Developing Child, 2023).

Developmental psychology increasingly recognizes childhood as a critical period during which foundational psychological capacities are established. The early years are characterized by rapid brain maturation, heightened neural plasticity, and extensive interactions between genetic predispositions and environmental influences. Experiences during this period contribute to the development of emotional regulation, executive functioning, attachment security, stress responsiveness, interpersonal

competence, and adaptive coping. Supportive caregiving environments promote healthy neurodevelopment and psychological adjustment, whereas chronic exposure to adversity may disrupt these developmental processes, increasing vulnerability to emotional and behavioural difficulties later in life (Center on the Developing Child, 2023; Gee et al., 2021; Nelson et al., 2024; Shonkoff et al., 2021).

Among developmental risk factors, Adverse Childhood Experiences (ACEs) have emerged as one of the most influential constructs in developmental and clinical psychology. ACEs encompass experiences such as emotional, physical, or sexual abuse, neglect, household dysfunction, parental mental illness, domestic violence, substance misuse, and family disruption. Since the landmark ACE study by Felitti et al. (1998), extensive international research has consistently demonstrated that cumulative exposure to childhood adversity predicts higher risks of anxiety, depression, post-traumatic stress symptoms, sleep disturbances, substance misuse, suicidal behaviour, and impaired psychosocial functioning throughout adulthood (Baldwin et al., 2023; Dánielsdóttir et al., 2024; Hughes et al., 2017). These findings support the life-course perspective that early adversity exerts enduring influences on mental health rather than representing isolated childhood events.

However, contemporary developmental science also emphasizes that childhood adversity does not inevitably determine adult psychological outcomes. Individuals exposed to similar adversities often demonstrate markedly different

developmental trajectories, highlighting the importance of protective experiences and adaptive psychological processes. Consequently, increasing scholarly attention has focused on Positive Childhood Experiences (PCEs), including emotionally responsive caregiving, secure attachment, family cohesion, perceived safety, emotional validation, and supportive interpersonal relationships. Unlike the absence of adversity, PCEs represent distinct developmental assets that promote resilience, adaptive coping, and psychological well-being across the lifespan (Han et al., 2023; Şanlı et al., 2024). Growing evidence suggests that positive childhood experiences may independently enhance adult mental health while buffering some of the detrimental effects associated with childhood adversity.

One mechanism through which childhood experiences influence later psychological functioning is emotional regulation, defined as the capacity to recognize, understand, and appropriately manage emotional responses across changing situations (Gross, 2024). Emotional regulation develops progressively through interactions with caregivers and broader social environments during childhood. Children raised within emotionally supportive families are more likely to acquire adaptive strategies for managing stress, frustration, and interpersonal conflict, whereas exposure to unpredictable or adverse environments may impair regulatory development and increase vulnerability to anxiety, depression, and chronic psychological distress (McCullen et al., 2023). Recent empirical evidence increasingly identifies emotional regulation as a central mechanism linking childhood experiences with adult mental health outcomes.

Another protective construct receiving substantial attention is psychological resilience, conceptualized as a dynamic process that enables individuals to adapt successfully despite adversity, trauma, or prolonged stress (Masten, 2021; Ungar, 2021). Rather than representing a fixed personality characteristic, resilience develops through interactions among individual strengths,

supportive relationships, educational opportunities, and community resources. Individuals exhibiting higher resilience generally report better emotional adjustment, psychological flexibility, and overall well-being, even when exposed to significant childhood adversity. Similarly, access to supportive interpersonal and professional resources—including family support, counselling, mentoring, and community services—may mitigate the long-term psychological consequences of adverse developmental experiences by strengthening adaptive coping and facilitating recovery (Substance Abuse and Mental Health Services Administration, 2023).

Within the Indian context, understanding the developmental determinants of adult psychological well-being has become increasingly important. Rapid urbanization, changing family structures, increased educational and occupational demands, and growing awareness of mental health have transformed childhood environments over recent decades. Despite these societal changes, empirical evidence integrating adverse childhood experiences, positive childhood experiences, emotional regulation, resilience, and support access within Indian adult populations remains comparatively limited. Existing studies frequently examine these constructs independently, limiting understanding of the complex developmental pathways through which childhood experiences influence adult psychological adjustment.

The present study addresses these gaps by adopting an integrated developmental framework that simultaneously examines both developmental risk and protective factors. Specifically, the study investigates the relationships between adverse childhood experiences, positive childhood experiences, emotional regulation, support access, and adult psychological well-being among Indian adults. Emotional regulation is examined as a mediating mechanism through which childhood experiences influence psychological distress, while support access is evaluated as a moderating resource capable of reducing the adverse effects of

childhood adversity. By integrating developmental psychopathology, attachment theory, resilience theory, ecological systems theory, and positive psychology, the study provides a comprehensive perspective on the developmental origins of adult mental health.

The study contributes to the literature in three important ways. First, it integrates adverse and positive childhood experiences within a single empirical framework, recognizing that developmental outcomes arise from the interplay of both risk and protective experiences. Second, it examines emotional regulation and support access as complementary explanatory mechanisms, thereby extending existing knowledge regarding indirect and conditional pathways linking childhood experiences with adult psychological well-being. Third, it provides contemporary evidence from an Indian community sample, addressing the relative scarcity of culturally relevant research in this area. Collectively, the findings are expected to inform trauma-informed psychological practice, resilience-building interventions, parenting programmes, educational initiatives, and public mental health policies aimed at promoting lifelong psychological well-being.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Developmental Perspective on Early Childhood Experiences and Adult Psychological Well-being

The relationship between early childhood experiences and adult psychological well-being has become one of the most influential areas of inquiry in developmental psychology, psychiatry, and public health. Contemporary developmental science recognizes that psychological functioning is not solely determined by present-life circumstances but reflects cumulative biological, psychological, and environmental influences operating throughout the life course. Childhood represents a particularly sensitive developmental period during which emotional, cognitive,

behavioural, and neurobiological systems are rapidly established, creating the foundation for psychological adaptation across adulthood (Bornstein, 2022; Daníelsdóttir et al., 2024).

The life-course perspective proposes that experiences occurring during early developmental stages influence later health outcomes through interconnected developmental pathways rather than isolated causal events. Children continuously interact with parents, caregivers, peers, educational environments, and broader social systems that collectively shape emotional competence, stress responsiveness, interpersonal functioning, and psychological resilience. These early developmental experiences become embedded within cognitive schemas, emotional processing systems, and behavioural patterns that influence how individuals perceive, interpret, and respond to future life events (Halfon & Forrest, 2018; Masten, 2021). Consequently, adult psychological well-being reflects the cumulative effects of developmental experiences beginning in childhood rather than merely the consequences of recent environmental stressors.

Recent advances in developmental neuroscience provide compelling biological evidence supporting this developmental perspective. During early childhood, rapid synaptic growth, neural pruning, and myelination occur within brain regions responsible for emotional regulation, executive functioning, memory, and social cognition. Positive developmental environments characterized by responsive caregiving, emotional warmth, and consistent support facilitate healthy maturation of the prefrontal cortex, hippocampus, and associated neural networks. In contrast, chronic exposure to stress and adversity may dysregulate the hypothalamic-pituitary-adrenal (HPA) axis, resulting in prolonged physiological stress responses that alter neural architecture and increase susceptibility to emotional and behavioural disorders across the lifespan (Gee, 2021; Nelson et al., 2024; Shonkoff et al., 2021).

Developmental psychopathology further explains that mental health outcomes emerge through

dynamic interactions between developmental risk and protective factors rather than deterministic pathways. The principles of multifinality and equifinality suggest that individuals exposed to similar childhood environments may experience different adult outcomes, while comparable psychological disorders may arise through multiple developmental pathways (Cicchetti & Toth, 2021; McLaughlin et al., 2021). This perspective emphasizes that childhood adversity increases developmental vulnerability but does not inevitably result in psychopathology because protective experiences, adaptive coping, and supportive environments may modify developmental trajectories throughout life.

Contemporary developmental research has therefore shifted from predominantly deficit-oriented models toward integrated frameworks that simultaneously examine developmental risks and protective processes. Although Adverse Childhood Experiences (ACEs) remain important predictors of adult psychological distress, increasing evidence demonstrates that Positive Childhood Experiences (PCEs) promote resilience, emotional competence, adaptive coping, and psychological well-being independently of adversity. Rather than representing opposite ends of a single continuum, adverse and positive childhood experiences constitute distinct developmental pathways that interact to influence adult psychological functioning (Bethell et al., 2019; Han et al., 2023; Şanlı et al., 2024). This conceptual evolution reflects the broader transition within psychology from identifying developmental vulnerabilities to understanding the mechanisms that foster lifelong psychological health.

The present study adopts this integrated developmental perspective by examining how adverse childhood experiences, positive childhood experiences, emotional regulation, and support access collectively contribute to adult emotional and psychological well-being. Rather than viewing childhood solely through the lens of trauma, the study recognizes early development as a multidimensional process in which both

developmental risks and protective experiences shape long-term psychological functioning. This perspective provides the conceptual foundation for understanding the complementary roles of adverse and positive childhood experiences discussed in the following section.

2.2 Adverse and Positive Childhood Experiences: Developmental Risk and Protective Factors

Early childhood experiences influence adult psychological functioning through the combined effects of developmental risk and developmental protection. Historically, psychological research concentrated primarily on identifying adverse childhood experiences as antecedents of adult psychopathology. However, recent scholarship increasingly recognizes that positive childhood experiences constitute equally important developmental assets that promote resilience and psychological flourishing. Contemporary developmental models therefore advocate examining adverse and positive childhood experiences simultaneously to obtain a more comprehensive understanding of lifelong psychological well-being (Bethell et al., 2019; Han et al., 2023).

Adverse Childhood Experiences (ACEs) refer to potentially traumatic events occurring before adulthood that disrupt healthy emotional, cognitive, and social development. These experiences commonly include physical, emotional, and sexual abuse, physical and emotional neglect, parental separation, domestic violence, household substance misuse, parental mental illness, incarceration of family members, and chronic family dysfunction (Felitti et al., 1998). Extensive international evidence demonstrates that cumulative exposure to ACEs predicts higher risks of anxiety disorders, depression, perceived stress, suicidal behaviour, substance misuse, sleep disturbances, emotional dysregulation, and impaired interpersonal functioning throughout adulthood (Baldwin et al., 2023; Daniélsdóttir et al., 2024; Hughes et al., 2017).

Neuroscientific and developmental research indicates that chronic childhood adversity

influences emotional development through prolonged activation of physiological stress-response systems. Persistent exposure to stressful environments alters neuroendocrine functioning and affects the maturation of brain regions responsible for executive control and emotional processing, thereby increasing vulnerability to psychological distress later in life (Gee, 2021; Nelson et al., 2024). Moreover, meta-analytic evidence consistently demonstrates a dose-response relationship, whereby exposure to multiple adverse experiences substantially increases the likelihood of emotional and behavioural disorders compared with exposure to isolated adversities (Hughes et al., 2017; Madigan et al., 2023).

Despite these robust associations, developmental outcomes following adversity remain highly variable. Many individuals exposed to significant childhood adversity maintain positive psychological functioning, suggesting the presence of protective developmental mechanisms. This observation has stimulated increasing scholarly interest in Positive Childhood Experiences (PCEs), which include emotionally supportive caregiving, secure attachment relationships, family cohesion, opportunities for emotional expression, positive peer interactions, trusted adult relationships, and perceptions of safety and belonging (Bethell et al., 2019). Positive childhood experiences provide emotional resources that facilitate adaptive development rather than merely compensating for adverse experiences.

Empirical evidence increasingly supports the independent contribution of positive childhood experiences to adult mental health. Han et al. (2023) concluded that positive childhood experiences consistently predict greater resilience, adaptive coping, emotional competence, and psychological well-being across diverse populations. Similarly, Şanlı et al. (2024) reported that emotionally supportive childhood environments were associated with significantly lower anxiety and depressive symptoms during adulthood, independent of childhood adversity.

These findings suggest that positive developmental experiences contribute uniquely to psychological adjustment rather than functioning solely as protective buffers against adversity.

Within the Indian context, available research similarly indicates that adverse childhood experiences are associated with increased psychological distress, whereas supportive parenting practices and emotionally nurturing family environments promote emotional stability, resilience, and psychological well-being. However, most Indian investigations examine these constructs independently and rarely integrate adverse and positive childhood experiences within a unified developmental framework. Consequently, relatively little is known regarding how developmental risks and protective experiences jointly influence adult psychological functioning among Indian community populations.

Collectively, the literature demonstrates that adult psychological well-being reflects the balance between developmental vulnerabilities and developmental resources accumulated throughout childhood. While adverse childhood experiences increase susceptibility to emotional and psychological distress, positive childhood experiences strengthen adaptive emotional functioning and psychological resilience. Accordingly, the present study proposes the following hypotheses:

H1: *Adverse childhood experiences are positively associated with adult psychological distress, including anxiety, depression, and perceived stress.*

H2: *Positive childhood experiences are positively associated with emotional regulation, resilience, sleep quality, and overall psychological well-being.*

2.3 Emotional Regulation as a Developmental Mechanism

Emotional regulation is widely regarded as one of the most important psychological mechanisms linking childhood experiences with adult mental health. It refers to the processes through which individuals monitor, evaluate, and modify

emotional responses to achieve adaptive behavioural and psychological outcomes (Gross, 2024). Rather than representing a fixed personality characteristic, emotional regulation develops progressively through repeated interactions with caregivers, family members, peers, and the broader social environment. Consequently, the quality of childhood experiences substantially influences an individual's capacity to regulate emotions across the lifespan.

Developmental and attachment theories propose that emotionally responsive caregiving provides children with opportunities to observe, practice, and internalize adaptive emotional regulation strategies. Secure attachment relationships foster emotional security, self-efficacy, and confidence in managing stressful situations because caregivers consistently model appropriate emotional expression and provide reassurance during periods of distress. In contrast, children exposed to neglect, inconsistent caregiving, abuse, or emotionally invalidating environments often experience disruptions in emotional development, leading to heightened emotional reactivity, avoidance, suppression, or maladaptive coping strategies that persist into adulthood (Dagan et al., 2024; Groh et al., 2022).

Evidence from developmental neuroscience further supports these theoretical propositions. Early environmental experiences influence the maturation of neural circuits involved in emotional processing and executive control, particularly within the prefrontal cortex, amygdala, hippocampus, and anterior cingulate cortex. Supportive developmental environments strengthen neural pathways responsible for cognitive flexibility, inhibitory control, and adaptive emotional responses. Conversely, prolonged exposure to childhood adversity may impair the development of these regulatory systems, increasing vulnerability to anxiety, depression, chronic stress, and emotional dysregulation (Gee, 2021; Nelson et al., 2024). These neurobiological findings explain why childhood experiences continue to influence

emotional functioning long after the original experiences have occurred.

Empirical evidence consistently demonstrates that emotional regulation is closely associated with adult psychological well-being. Individuals possessing stronger emotional regulation abilities report lower levels of anxiety, depression, perceived stress, and emotional exhaustion, while simultaneously exhibiting greater resilience, life satisfaction, and psychological flourishing (Gross, 2024; Ryff, 2022). Conversely, emotional dysregulation has emerged as a transdiagnostic risk factor underlying numerous psychological disorders, including mood disorders, anxiety disorders, post-traumatic stress disorder, and personality disorders. This broad influence highlights emotional regulation as a central process through which developmental experiences affect adult mental health.

Recent studies increasingly identify emotional regulation as a mediating mechanism linking childhood experiences with later psychological outcomes. McCullen et al. (2023) demonstrated that exposure to childhood adversity predicted poorer emotional regulation, which subsequently contributed to elevated psychological distress. Similarly, Weissman et al. (2022) reported that adaptive emotional regulation substantially reduced the adverse psychological consequences associated with childhood trauma, suggesting that childhood experiences influence adult mental health partly by shaping emotional regulatory capacities. Positive childhood experiences appear to strengthen this developmental pathway by promoting emotional awareness, constructive coping, and psychological flexibility through emotionally supportive family interactions (Han et al., 2023).

Although international evidence strongly supports these indirect developmental pathways, comparatively limited empirical research within India has examined emotional regulation as a mediator connecting childhood experiences with adult psychological well-being. Most existing investigations emphasize direct relationships

between parenting practices, childhood adversity, or emotional intelligence and mental health outcomes. Examining emotional regulation as a mediating mechanism therefore extends existing knowledge by explaining *how* childhood experiences translate into adult emotional and psychological adjustment rather than merely establishing that such relationships exist.

Based on developmental psychology, attachment theory, developmental neuroscience, and contemporary empirical evidence, emotional regulation is expected to function as a key psychological mechanism through which childhood experiences influence adult psychological distress. Accordingly, the following hypothesis is proposed:

H3: *Emotional regulation mediates the relationship between early childhood experiences and adult psychological distress.*

2.4 Support Access as a Protective Resource

While childhood experiences establish important developmental trajectories, contemporary developmental science emphasizes that these trajectories remain modifiable throughout life through supportive interpersonal relationships and environmental resources. Among the protective factors receiving increasing attention is support access, defined as the availability of emotional, psychological, familial, social, and professional resources that assist individuals in managing stress and adversity. Support access includes emotionally supportive family relationships, trusted friendships, mentoring, counselling services, peer-support networks, and community mental health resources that collectively promote psychological adaptation and resilience (Substance Abuse and Mental Health Services Administration [SAMHSA], 2023).

Ecological Systems Theory provides an important framework for understanding the protective influence of support access. According to Bronfenbrenner and Morris (2006), psychological development results from continuous interactions between individuals and multiple environmental systems, including family, educational institutions,

peer networks, workplaces, healthcare services, and broader communities. These ecological systems provide emotional, informational, and instrumental support that strengthens adaptive functioning throughout the life course. Consequently, adult psychological well-being is shaped not only by childhood experiences but also by the quality of supportive relationships available during later developmental stages.

The stress-buffering hypothesis proposed by Cohen and Wills (1985) further explains the moderating role of support access. This perspective suggests that supportive relationships reduce the psychological impact of stressful experiences by enhancing coping resources, strengthening self-efficacy, facilitating adaptive cognitive appraisal, and reducing perceived stress. Individuals with greater access to emotional and practical support generally demonstrate better psychological adjustment because they possess more effective resources for managing adversity. Numerous empirical investigations continue to support this theory, indicating that social support consistently reduces vulnerability to anxiety, depression, and chronic psychological distress.

Trauma-informed care frameworks similarly argue that adverse childhood experiences do not inevitably result in lifelong psychological impairment. Rather, emotionally safe environments, collaborative relationships, culturally responsive care, and accessible psychological services promote recovery by strengthening resilience, emotional regulation, and adaptive coping. Contemporary trauma-informed practice therefore emphasizes empowerment and supportive intervention rather than focusing exclusively on pathology, recognizing that developmental vulnerabilities remain amenable to positive change across adulthood (Ungar, 2021; SAMHSA, 2023).

Recent empirical evidence demonstrates that individuals with greater access to supportive relationships and psychological services report significantly lower levels of emotional distress despite histories of childhood adversity. Family

support, peer connectedness, professional counselling, and community engagement have been associated with enhanced resilience, improved emotional regulation, lower depressive symptoms, and higher psychological well-being (Fritz et al., 2023; Masten, 2021; Ungar, 2021). These findings indicate that supportive interpersonal resources weaken the relationship between childhood adversity and adult psychological distress by providing opportunities for emotional validation, adaptive coping, and psychological recovery.

Within India, support access assumes particular importance because collectivistic cultural values traditionally emphasize strong family relationships and community interconnectedness. However, rapid urbanization, changing family structures, occupational mobility, and continuing stigma surrounding mental health have altered traditional support systems, potentially limiting access to emotional and professional assistance. Despite these societal changes, relatively few Indian studies have examined support access as a moderating mechanism within developmental models of adult psychological well-being. Most investigations have considered social support as an independent predictor rather than exploring its capacity to weaken the adverse psychological effects of childhood adversity.

Integrating ecological systems theory, trauma-informed care, and the stress-buffering hypothesis suggests that supportive emotional and psychological resources can modify developmental trajectories established during childhood. Individuals with greater access to supportive relationships and professional mental health services are expected to demonstrate lower psychological distress despite comparable levels of childhood adversity, reflecting the protective influence of supportive environments. Accordingly, the present study proposes the following hypothesis:

H4: *Support access moderates the relationship between adverse childhood experiences and adult psychological distress, such that the association is weaker among individuals reporting greater*

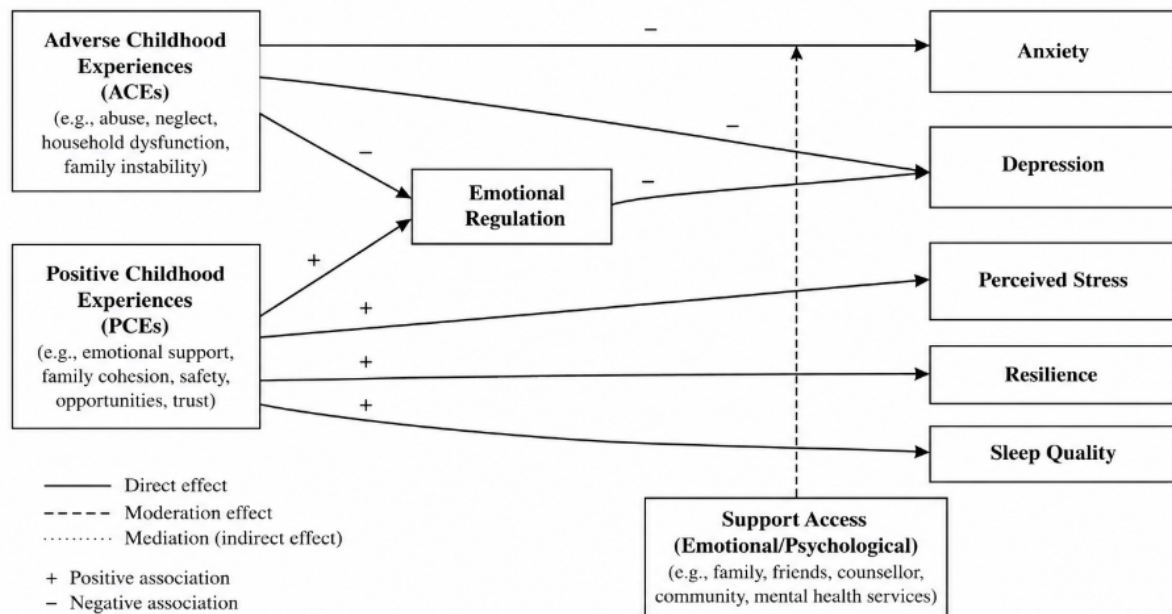
access to supportive emotional and psychological resources.

2.5 Integrated Theoretical Framework

The present study is grounded in an integrated theoretical framework that synthesizes Attachment Theory, Developmental Psychopathology, Ecological Systems Theory, Resilience Theory, and Positive Psychology. Rather than relying on a single theoretical perspective, the study recognizes that adult emotional and psychological well-being emerges through the interaction of multiple developmental processes operating across the lifespan. Contemporary developmental science increasingly advocates integrative frameworks because childhood experiences influence psychological functioning through interconnected biological, cognitive, emotional, interpersonal, and environmental pathways rather than through isolated mechanisms (Masten, 2021; Ungar, 2021).

Attachment Theory (Bowlby, 1988) provides the developmental foundation by explaining how early caregiver relationships shape emotional security, interpersonal trust, and adaptive emotional regulation. Secure attachment promotes healthy emotional development and resilience, whereas insecure attachment resulting from neglect, inconsistency, or abuse increases vulnerability to psychological distress (Dagan et al., 2024; Groh et al., 2022). Complementing this perspective, Developmental Psychopathology explains that adult psychological outcomes emerge from the cumulative interaction of developmental risks and protective experiences over time. This framework recognizes the principles of multifinality and equifinality, whereby similar childhood experiences may produce different adult outcomes depending on subsequent developmental influences (Cicchetti & Toth, 2021).

Ecological Systems Theory extends these perspectives by emphasizing that psychological development continues to be influenced by interactions across multiple environmental systems, including family, educational institutions,



workplaces, peer networks, and community resources (Bronfenbrenner & Morris, 2006). Consequently, support access represents an important contextual resource capable of modifying developmental trajectories established during childhood. Resilience Theory further proposes that adaptive functioning is not an innate characteristic but a dynamic developmental process strengthened through supportive relationships, positive life experiences, and effective coping strategies (Fritz et al., 2023; Masten, 2021). Finally, Positive Psychology shifts attention from psychopathology toward psychological strengths, emotional well-being, flourishing, and adaptive functioning, highlighting the developmental value of positive childhood

experiences in promoting lifelong mental health (Ryff, 2022; VanderWeele, 2023).

Collectively, these theoretical perspectives support an integrated developmental model in which adverse childhood experiences function as developmental risk factors, positive childhood experiences represent developmental assets, emotional regulation operates as a mediating psychological mechanism, and support access serves as a moderating environmental resource influencing adult emotional and psychological well-being. This integrated framework provides the conceptual foundation for the empirical model examined in the present study.

Figure 1. Integrated Conceptual Framework

Note. Adverse Childhood Experiences (ACE) and Positive Childhood Experiences (PCE) function as primary developmental antecedents. Emotional Regulation mediates the relationship between childhood experiences and adult psychological distress, whereas Support Access moderates the relationship between ACE and adult psychological distress. Adult Psychological Well-being comprises anxiety, depression, perceived stress, resilience, sleep quality, and overall psychological well-being.

2.6 Research Gap and Hypothesis Development

Although substantial progress has been made in understanding the long-term consequences of

childhood experiences, several important conceptual, methodological, and contextual gaps remain. First, contemporary literature continues to emphasize adverse childhood experiences more extensively than positive childhood experiences, resulting in a predominantly deficit-oriented understanding of psychological development. While considerable evidence demonstrates that childhood adversity predicts poorer mental health, comparatively fewer studies have investigated how positive developmental experiences independently contribute to emotional regulation, resilience, and lifelong psychological well-being (Han et al., 2023; Şanlı et al., 2024).

Second, most empirical investigations examine developmental constructs independently rather than within an integrated framework. Variables such as childhood adversity, positive childhood experiences, emotional regulation, resilience, psychological well-being, and social support are frequently investigated as isolated predictors or outcomes. Consequently, limited evidence exists regarding the combined influence of developmental risk factors and protective mechanisms operating simultaneously across the lifespan. This fragmented approach restricts comprehensive understanding of the developmental pathways underlying adult psychological functioning.

Third, despite increasing interest in mediation and moderation analyses within developmental psychology, relatively few studies have simultaneously examined emotional regulation as a mediating mechanism and support access as a moderating resource within the same conceptual model. Such an integrated approach is essential because adult psychological well-being is shaped not only by direct developmental influences but also by the psychological processes and environmental conditions through which these influences operate.

Finally, an important contextual gap exists within the Indian literature. Most evidence concerning childhood experiences and adult mental health originates from North America and Europe, where cultural norms, parenting practices, family structures, and mental health systems differ considerably from those in India. Although Indian research examining childhood adversity and psychological well-being has expanded during recent years, relatively few community-based studies have simultaneously investigated adverse childhood experiences, positive childhood experiences, emotional regulation, support access, and adult psychological well-being within a unified developmental framework. Addressing this limitation contributes culturally relevant evidence while enhancing the generalizability of contemporary developmental theories.

To address these gaps, the present study proposes and empirically examines an integrated developmental model in which childhood experiences influence adult emotional and psychological well-being through both direct and indirect pathways. Based on the reviewed theoretical and empirical literature, the following hypotheses are proposed:

H1: Adverse childhood experiences are positively associated with adult psychological distress, including anxiety, depression, and perceived stress.

H2: Positive childhood experiences are positively associated with emotional regulation, resilience, sleep quality, and overall psychological well-being.

H3: Emotional regulation mediates the relationship between early childhood experiences and adult psychological distress.

H4: Support access moderates the relationship between adverse childhood experiences and adult psychological distress, such that the relationship is weaker among individuals reporting greater access to supportive emotional and psychological resources.

The reviewed literature collectively supports a multidimensional developmental perspective in which childhood experiences shape adult psychological functioning through the interaction of developmental risks, protective experiences, psychological mechanisms, and environmental resources. By integrating these constructs within a single empirical framework, the present study extends existing developmental research while addressing important theoretical and contextual gaps in the contemporary literature. The following section describes the methodology employed to examine the proposed relationships and test the study hypotheses.

III. METHODOLOGY

3.1 Research Design

The present study employed a quantitative, cross-sectional, correlational research design to

investigate the long-term relationships between early childhood experiences and adult emotional and psychological well-being. A quantitative approach was considered appropriate because the research sought to examine measurable relationships among multiple psychological constructs using standardized assessment instruments and inferential statistical techniques. Quantitative research facilitates objective hypothesis testing, minimizes researcher bias, and enables statistical estimation of the strength and direction of relationships among variables (Hair et al., 2022; Creswell & Creswell, 2023).

A cross-sectional design was adopted because both childhood experiences and current psychological functioning were assessed at a single point in time. Although longitudinal studies provide stronger evidence regarding developmental trajectories, cross-sectional designs remain appropriate for examining retrospective childhood experiences and their associations with adult psychological outcomes, particularly when investigating mediation and moderation models in community populations (Spector, 2019). The correlational nature of the study allowed examination of naturally occurring relationships without manipulating participants' experiences, which would be ethically impossible in childhood adversity research.

The study was guided by an integrated developmental framework proposing that adverse and positive childhood experiences influence adult psychological well-being directly and indirectly through emotional regulation, while support access modifies the strength of these relationships. Accordingly, the selected research design was well suited for testing both direct and conditional relationships among the study variables.

3.2 Participants and Sampling

The target population comprised Indian adults aged between 18 and 45 years, representing individuals capable of retrospectively reporting childhood experiences and evaluating their current psychological functioning. Adults were

selected because the primary objective of the study was to investigate the enduring influence of childhood developmental experiences on adult emotional and psychological well-being.

A total of 306 participants were included in the final analysis. This sample size exceeded commonly recommended minimum requirements for multivariate statistical procedures, including multiple regression, mediation analysis, and moderation analysis, thereby providing adequate statistical power for hypothesis testing (Hair et al., 2022; Creswell & Creswell, 2023). Participants represented diverse educational, occupational, and demographic backgrounds, enhancing the generalizability of the findings within the selected population.

A purposive sampling technique was employed because participants were required to satisfy predefined eligibility criteria relevant to the research objectives. Purposive sampling is widely applied in psychological research when respondents must possess specific characteristics, such as adulthood, the ability to recall childhood experiences, and willingness to provide informed consent (Etikan & Bala, 2017). Recruitment was conducted through community networks and online survey distribution, enabling participation from individuals across different socioeconomic backgrounds.

3.3 Measures

Data were collected using a structured questionnaire consisting of standardized psychological measures assessing childhood experiences and adult psychological functioning. The questionnaire comprised two broad sections: demographic information and psychometric scales measuring the principal study variables.

Adverse Childhood Experiences (ACE) were assessed using standardized items measuring exposure to abuse, neglect, household dysfunction, and related developmental adversities experienced before adulthood. Higher scores reflected greater cumulative childhood adversity.

Positive Childhood Experiences (PCE) were measured using items assessing emotionally supportive caregiving, family connectedness, emotional safety, trusted relationships, and nurturing developmental experiences. Higher scores indicated more positive developmental environments during childhood.

Emotional Regulation was assessed using a validated self-report instrument evaluating participants' ability to understand, manage, and regulate emotional responses across different situations.

Psychological Resilience measured individuals' capacity to adapt successfully to stress and adversity using standardized resilience items. Psychological Distress comprised three dimensions—anxiety, depression, and perceived stress—assessed using established psychometric scales widely employed in psychological research. Sleep Quality evaluated participants' subjective perceptions of sleep adequacy and restorative sleep, while Psychological Well-being measured positive mental health, emotional functioning, and overall life satisfaction.

Finally, Support Access assessed participants' perceived availability of emotional, psychological, familial, or professional support resources capable of assisting them during emotionally challenging situations.

All multi-item scales demonstrated acceptable levels of internal consistency, supporting the reliability of the measurements employed in the study.

3.4 Data Collection Procedure

Data were collected between January and March 2026 using a structured online questionnaire administered through secure digital survey platforms. Prior to participation, respondents received an information sheet describing the objectives of the study, voluntary nature of participation, estimated completion time, confidentiality procedures, and contact information for the researcher.

Participation was entirely voluntary, and no financial or material incentives were offered. Electronic informed consent was obtained before respondents proceeded to the questionnaire. To improve data quality, incomplete submissions, duplicate responses, and questionnaires exhibiting excessive missing values were excluded prior to statistical analysis. The final dataset consisted of 306 complete responses, which formed the basis of the empirical analyses.

3.5 Ethical Considerations

The study adhered to internationally accepted ethical principles governing psychological research involving human participants. Participation was voluntary, and respondents retained the right to discontinue participation at any stage without penalty. Informed consent was obtained electronically before commencement of the survey.

No personally identifiable information was collected. All responses were anonymized and analyzed in aggregate form to ensure participant confidentiality and privacy. The study posed minimal psychological risk because participants responded only to self-report questionnaire items concerning childhood experiences and current psychological functioning.

The research complied with the ethical principles outlined in the Declaration of Helsinki and followed the institutional ethical guidelines governing postgraduate psychological research. Data were stored securely and used exclusively for academic purposes.

3.6 Data Analysis

Data analysis was performed using IBM SPSS Statistics (Version 29). Prior to hypothesis testing, the dataset was screened for completeness, coding accuracy, missing values, and outliers. Descriptive statistics were computed to summarize demographic characteristics and central tendencies of the study variables.

Internal consistency reliability of multi-item scales was evaluated using Cronbach's alpha, with

coefficients exceeding .70 considered acceptable (Hair et al., 2022). Pearson product-moment correlation coefficients were calculated to examine bivariate relationships among the study variables.

To test the proposed hypotheses, hierarchical multiple regression analyses were conducted to determine the predictive effects of childhood experiences on adult psychological outcomes while controlling for relevant variables. Mediation analysis was performed using bootstrap procedures with 5,000 resamples, enabling estimation of indirect effects and bias-corrected confidence intervals. Moderation analysis examined whether support access significantly altered the relationship between adverse childhood experiences and psychological distress through interaction effects.

Statistical significance was evaluated at $p < .05$, and standardized regression coefficients, confidence intervals, effect sizes, and explained variance (R^2) were reported to facilitate comprehensive interpretation of the findings.

IV. RESULTS

4.1 Preliminary Analysis and Participant Characteristics

The statistical analysis was conducted on responses obtained from **306 adults** aged 18–45 years. Preliminary screening was undertaken to evaluate completeness, duplicate cases, coding accuracy, and the suitability of the distributions for inferential analysis. No missing values or duplicate records were identified in the final dataset. The skewness coefficients for the principal variables ranged from –0.56 to 0.83, indicating no substantial departure from univariate normality. HC3 heteroskedasticity-consistent standard errors were nevertheless used in the regression and moderation analyses to provide robust statistical inference.

Participants had a mean age of **32.20 years** ($SD = 7.58$). Gender representation was balanced, with 151 male participants, 148 female participants, and seven participants identifying as another

gender or preferring not to disclose their gender. Postgraduate respondents formed the largest educational or occupational category, followed by working professionals and undergraduate respondents. This distribution provided a heterogeneous adult sample for examining the long-term associations between childhood experiences and current psychological functioning.

Table 1. *Demographic Characteristics of Participants (N = 306)*

Characteristic	Category	<i>n</i>	%
Gender	Male	151	49.3
	Female	148	48.4
	Other/Prefer not to say	7	2.3
Educational or occupational status	Postgraduate	103	33.7
	Working professional	98	32.0
	Undergraduate	86	28.1
	Other educational status	19	6.2

Note. Participant age ranged from 18 to 45 years, with $M = 32.20$ and $SD = 7.58$.

4.2 Reliability, Descriptive Statistics, and Correlations

Internal consistency was assessed before hypothesis testing. Cronbach's alpha coefficients ranged from .713 to .814, indicating acceptable to good reliability across all multi-item measures. Resilience demonstrated the highest internal consistency, $\alpha = .814$, followed by emotional regulation and depression, $\alpha = .781$. Although adverse childhood experiences were assessed as a cumulative exposure index rather than a conventional reflective construct, the ACE measure also exceeded the accepted .70 criterion. The measures were therefore considered sufficiently reliable for subsequent analyses.

Participants reported relatively low average exposure to adverse childhood experiences ($M = 2.33$, $SD = 2.23$) and comparatively high levels of positive childhood experiences ($M = 6.62$, $SD = 2.71$). Mean emotional regulation ($M = 3.14$, $SD = 1.07$) and resilience ($M = 3.10$, $SD = 1.12$) scores were slightly above the midpoint of their respective 1–5 scales. Anxiety ($M = 5.42$, $SD = 3.52$), depression ($M = 5.13$, $SD = 3.79$), and stress ($M = 5.05$, $SD = 3.61$) were moderate on their 0–12 ranges. Mean sleep quality was close to the midpoint of the scale ($M = 2.97$, $SD = 1.15$).

The hypothesized bivariate associations were statistically significant. ACE scores were positively related to anxiety, $r = .312$, depression, $r = .338$, and stress, $r = .291$, all $ps < .001$. PCE scores were positively related to emotional regulation, $r = .382$, resilience, $r = .451$, and sleep quality, $r = .241$, all $ps < .001$. The strongest association was observed between positive childhood experiences and resilience.

Table 2. Reliability, Descriptive Statistics, and Hypothesized Correlations

Panel A. Reliability and Descriptive Statistics

Variable	Items	α	M	SD	Minimum	Maximum	Skewness
Adverse childhood experiences	10	.713	2.33	2.23	0	9	0.83
Positive childhood experiences	10	.773	6.62	2.71	0	10	−0.56
Emotional regulation	5	.781	3.14	1.07	1	5	−0.13
Resilience	5	.814	3.10	1.12	1	5	−0.06
Anxiety	4	.727	5.42	3.52	0	12	0.13
Depression	4	.781	5.13	3.79	0	12	0.28
Stress	4	.735	5.05	3.61	0	12	0.26
Sleep quality	4	.770	2.97	1.15	1	5	0.08

Panel B. Hypothesized Correlations

Predictor	Outcome	r	p
ACE	Anxiety	.312	< .001
ACE	Depression	.338	< .001
ACE	Stress	.291	< .001
PCE	Emotional regulation	.382	< .001
PCE	Resilience	.451	< .001
PCE	Sleep quality	.241	< .001

Note. ACE = adverse childhood experiences; PCE = positive childhood experiences.

4.3 Direct Effects of Childhood Experiences

Separate robust regression models were estimated to test the direct relationships proposed in H1 and H2. H1 predicted that ACE

exposure would be positively associated with anxiety, depression, and stress. ACE significantly predicted all three outcomes.

For anxiety, each one-unit increase in ACE score was associated with an estimated 0.49-point increase in anxiety, $B = 0.49$, robust $SE = 0.09$, $\beta = .31$, $t = 5.44$, $p < .001$. The model explained 9.7% of the variance in anxiety. ACE also predicted depression, $B = 0.56$, robust $SE = 0.10$, $\beta = .34$, $t = 5.82$, $p < .001$, explaining 11.4% of its variance. The association with stress was similarly significant, $B = 0.44$, robust $SE = 0.09$, $\beta = .29$, $t = 5.02$, $p < .001$, with the model explaining 8.4% of the variance. Depression demonstrated the strongest relationship with ACE exposure.

H2 proposed that PCEs would positively predict adaptive psychological outcomes. PCEs significantly predicted emotional regulation, $B =$

0.154, robust $SE = 0.021$, $\beta = .382$, $t = 7.33$, $p < .001$, explaining 14.6% of its variance. PCEs also significantly predicted resilience, $B = 0.172$, robust $SE = 0.020$, $\beta = .451$, $t = 8.64$, $p < .001$. This model explained 20.3% of the variance and represented the strongest direct-effect model. Finally, PCEs

predicted better sleep quality, $B = 0.081$, robust $SE = 0.019$, $\beta = .241$, $t = 4.31$, $p < .001$, explaining 5.8% of its variance.

Table 3. Robust Regression Analyses Predicting Adult Psychological Outcomes

Hypothesis	Predictor	Outcome	B	Robust SE	β	t	p	R ²
H1	ACE	Anxiety	0.490	0.090	.312	5.44	< .001	.097
H1	ACE	Depression	0.560	0.100	.338	5.82	< .001	.114
H1	ACE	Stress	0.440	0.090	.291	5.02	< .001	.084
H2	PCE	Emotional regulation	0.154	0.021	.382	7.33	< .001	.146
H2	PCE	Resilience	0.172	0.020	.451	8.64	< .001	.203
H2	PCE	Sleep quality	0.081	0.019	.241	4.31	< .001	.058

Note. HC3 robust standard errors were used.

4.4 Mediation Analysis

H3 proposed that emotional regulation would mediate the relationship between adverse childhood experiences and adult psychological distress. Anxiety was examined as the focal distress outcome. The indirect effect was estimated using 5,000 bootstrap resamples, with mediation considered significant when the 95% bootstrap confidence interval excluded zero.

ACE exposure negatively predicted emotional regulation, path $a = -0.128$, $p < .001$. Emotional regulation, controlling for ACE, negatively predicted anxiety, path $b = -0.604$, $p < .001$. The resulting indirect effect was positive and statistically significant, $ab = 0.077$, 95% bootstrap CI [0.040, 0.121]. This indicates that higher ACE exposure was associated with poorer emotional regulation, which in turn was associated with greater anxiety.

The direct effect of ACE on anxiety remained significant after emotional regulation was entered into the model, $c' = 0.416$, $p < .001$. Emotional regulation therefore accounted for part, but not all, of the association between adversity and anxiety. H3 was supported as a partial mediation effect.

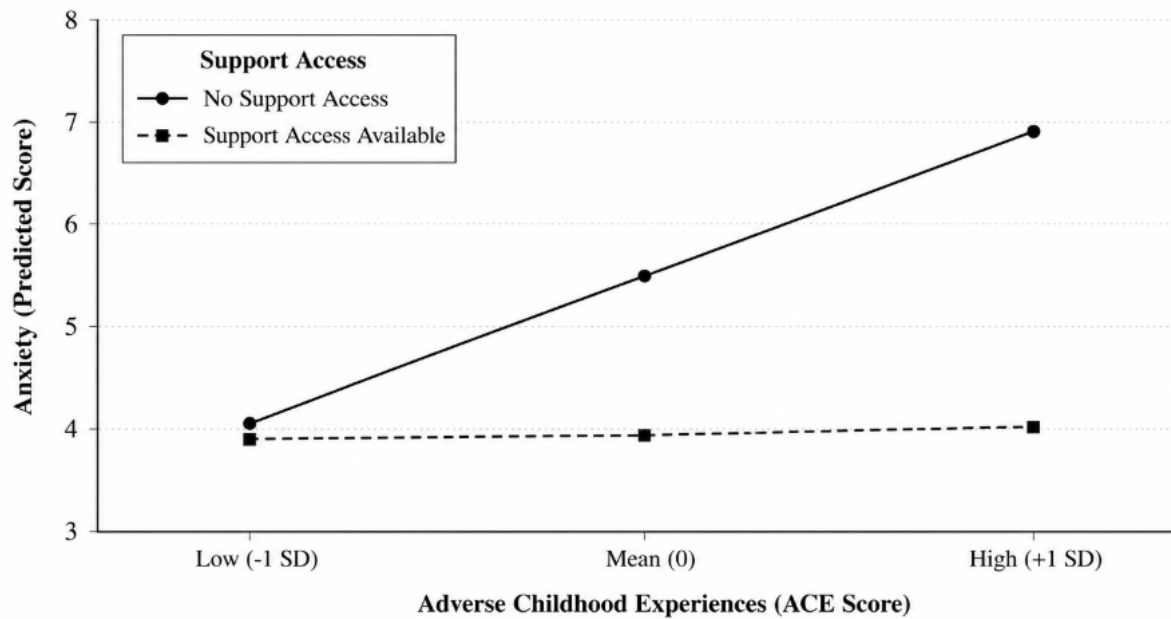
Table 4. Bootstrap Mediation Analysis: Emotional Regulation as a Mediator Between ACE and Anxiety

Path or effect	Estimate	95% bootstrap CI	p/Decision
ACE → Emotional regulation (a)	-0.128	[-0.171, -0.086]	< .001
Emotional regulation → Anxiety (b)	-0.604	[-0.779, -0.429]	< .001
Direct effect (c')	0.416	[0.298, 0.534]	< .001
Indirect effect (a × b)	0.077	[0.040, 0.121]	Significant

Note. Bootstrap confidence intervals were based on 5,000 resamples.

4.5 Moderating Effect of Support Access

H4 proposed that access to emotional or psychological support would weaken the relationship between ACE exposure and anxiety. ACE scores were mean-centred, support access



was coded 0 = no access and 1 = access, and an ACE $\times$ support interaction term was entered into the regression model.

The overall model was statistically significant, $F(3, 302) = 9.68, p < .001$, and explained 8.1% of the variance in anxiety. The ACE $\times$ support interaction was negative and significant, $B = -0.660$, $HC3 SE = 0.162, p < .001$, 95% CI $[-0.979, -0.342]$. The interaction contributed an additional 4.4% of explained variance, with a small interaction effect size, $f^2 = .047$. Support access did not demonstrate a significant independent main effect, $p = .237$; its primary contribution occurred through buffering

the association between ACE exposure and anxiety.

Simple-slope analysis clarified the interaction. Among participants without support access, ACE significantly predicted anxiety, $B = 0.600$, $HC3 SE = 0.115, p < .001$. Among participants with support access, the corresponding relationship was small and nonsignificant, $B = -0.061$, $HC3 SE = 0.115, p = .596$. H4 was therefore supported.

Figure 2. Moderating Effect of Support Access on the Relationship Between ACE and Adult Anxiety

Note. The slope for participants without support access is substantially steeper than the slope for those with support access.

Table 5. Moderation Analysis and Summary of Hypothesis Decisions

Panel A. Moderation Model

Predictor	<i>B</i>	HC3 <i>SE</i>	<i>p</i>	95% CI
Constant	5.565	0.256	< .001	[5.063, 6.067]
ACE, mean-centred	0.600	0.115	< .001	[0.374, 0.825]
Support access	-0.464	0.393	.237	[-1.234, 0.305]

ACE $\times$ Support	-0.660	0.162	< .001	[-0.979, -0.342]
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Panel B. Conditional Effects and Hypothesis Decisions

Analysis/Hypothesis	Result	Decision
ACE slope: no support	$B = 0.600, p < .001$	Significant
ACE slope: support available	$B = -0.061, p = .596$	Nonsignificant
H1: ACE predicts anxiety,	All effects significant	Supported

depression, and stress		
H2: PCE predicts emotional regulation, resilience, and sleep quality	All tested effects significant	Supported
H3: Emotional regulation mediates ACE–anxiety relationship	Significant indirect effect	Supported; partial mediation
H4: Support moderates ACE–anxiety relationship	Significant interaction	Supported

Note. Moderation model statistics: $R^2 = .081$, adjusted $R^2 = .072$, ΔR^2 for interaction = .044, $f^2 = .047$.

4.6 Summary of Results

The results supported the four hypotheses empirically tested in the dissertation. Adverse childhood experiences significantly predicted greater anxiety, depression, and stress, whereas positive childhood experiences predicted stronger emotional regulation, resilience, and sleep quality. Emotional regulation partially explained the association between childhood adversity and anxiety. Support access significantly buffered this relationship: ACE exposure predicted anxiety among participants without support, but not among those who reported access to supportive resources. Collectively, the findings support an integrated developmental risk-and-protection model in which early adversity increases psychological vulnerability, while positive developmental experiences, regulatory capacity, resilience, and support resources contribute to more adaptive adult functioning.

V. DISCUSSION

The present study investigated how adverse childhood experiences (ACEs), positive childhood experiences (PCEs), emotional regulation, and support access jointly influence adult

psychological well-being. Four major findings emerged. First, ACEs significantly predicted anxiety, depression, and perceived stress. Second, PCEs significantly predicted emotional regulation, resilience, and sleep quality. Third, emotional regulation partially mediated the relationship between childhood adversity and anxiety. Finally, access to emotional or psychological support weakened the relationship between childhood adversity and adult anxiety. Collectively, these findings support an integrated developmental framework in which psychological functioning reflects the interaction of developmental risks, protective experiences, individual regulatory capacities, and supportive environments.

5.1 Adverse Childhood Experiences and Adult Psychological Distress

The findings supported **Hypothesis 1**, demonstrating that greater exposure to adverse childhood experiences was associated with higher levels of anxiety, depression, and perceived stress. Depression exhibited the strongest association with childhood adversity, although all three psychological outcomes were significantly predicted by ACE exposure. These findings reinforce extensive evidence that childhood adversity constitutes an important developmental risk factor for adult mental health (Madigan et al., 2023; Baldwin et al., 2023; Daníelsdóttir et al., 2024).

Developmental psychopathology provides a useful explanation for these results. Repeated exposure to abuse, neglect, family conflict, or household dysfunction may disrupt attachment security, emotional development, and stress regulation during critical developmental periods. These early adaptations can increase vulnerability to emotional disorders when individuals encounter later life stressors (Cicchetti & Toth, 2021; McLaughlin et al., 2021). Likewise, developmental neuroscience suggests that prolonged childhood stress influences neural systems involved in emotional processing and executive control, thereby increasing susceptibility to anxiety and depression across adulthood (Gee, 2021; Nelson et al., 2024).

Importantly, the observed effect sizes were moderate rather than deterministic. Childhood adversity explained only part of the variability in adult psychological distress, indicating that later developmental experiences, coping resources, and environmental influences continue to shape psychological outcomes. This finding supports contemporary trauma-informed perspectives that view childhood adversity as a developmental vulnerability rather than an irreversible determinant of adult mental health.

5.2 Positive Childhood Experiences and Adaptive Psychological Functioning

The findings also supported **Hypothesis 2**, indicating that positive childhood experiences significantly predicted emotional regulation, resilience, and sleep quality. Among these outcomes, resilience demonstrated the strongest association with positive developmental experiences, highlighting the enduring influence of emotionally supportive childhood environments.

Unlike traditional deficit-oriented approaches, positive childhood experiences emphasize developmental assets such as emotional warmth, family cohesion, trusted adult relationships, encouragement, and psychological safety. These experiences contribute to adaptive emotional functioning independently of childhood adversity (Bethell et al., 2019; Han et al., 2023). The present findings therefore reinforce growing evidence that psychological well-being depends not only on reducing adversity but also on strengthening positive developmental experiences.

The strong relationship between PCEs and resilience is particularly noteworthy. Resilience theory conceptualizes resilience as a dynamic developmental process that emerges through supportive interpersonal relationships rather than as a fixed personality characteristic (Ungar, 2021; Masten, 2021). Children who experience emotional validation and dependable caregiving are more likely to develop confidence, optimism, adaptive coping, and psychological flexibility that persist throughout adulthood.

Positive childhood experiences also predicted stronger emotional regulation, supporting attachment theory and developmental learning perspectives. Emotionally responsive caregivers provide repeated opportunities for children to recognize, express, and regulate emotions, enabling these skills to become internalized over time (Gross, 2024). The smaller but significant association between positive childhood experiences and sleep quality further suggests that emotionally secure developmental environments contribute to healthier long-term behavioural and physiological regulation.

Collectively, these findings highlight that adverse and positive childhood experiences should not be viewed as opposite ends of a single continuum. Individuals may simultaneously experience developmental adversity and meaningful sources of protection. Consequently, promoting positive childhood environments may strengthen lifelong psychological resilience even when adverse experiences cannot be completely prevented.

5.3 Emotional Regulation as a Developmental Mechanism

The study supported **Hypothesis 3**, demonstrating that emotional regulation partially mediated the relationship between adverse childhood experiences and anxiety. Greater childhood adversity was associated with poorer emotional regulation, which subsequently contributed to higher anxiety levels. However, the persistence of a significant direct effect indicated partial rather than complete mediation.

This finding suggests that childhood adversity influences adult anxiety partly by shaping emotional regulatory capacities. Children exposed to emotionally invalidating or threatening environments may have fewer opportunities to develop adaptive strategies such as emotional awareness, cognitive reappraisal, and distress tolerance. Instead, maladaptive responses including avoidance, suppression, rumination, or heightened vigilance may become established and continue into adulthood (Gross, 2024).

The findings are consistent with recent studies identifying emotional regulation as a central mechanism linking childhood adversity with anxiety, depression, and trauma-related symptoms (McCullen et al., 2023; Weissman et al., 2022). Nevertheless, because mediation was only partial, additional developmental pathways—including attachment insecurity, maladaptive cognitive schemas, social isolation, and physiological stress reactivity—are likely to contribute to adult psychological distress.

From a clinical perspective, emotional regulation represents an important intervention target because it remains modifiable throughout adulthood. Psychological interventions that strengthen emotional awareness, cognitive flexibility, mindfulness, and adaptive coping may reduce the long-term psychological consequences associated with childhood adversity.

5.4 Support Access as a Protective Resource

The findings further supported **Hypothesis 4**, indicating that support access significantly moderated the relationship between adverse childhood experiences and anxiety. Childhood adversity predicted anxiety among participants without emotional or psychological support, whereas this relationship became statistically non-significant among individuals reporting access to supportive resources.

These findings strongly support the **stress-buffering hypothesis**, which proposes that supportive relationships reduce the psychological impact of stressful experiences by strengthening coping resources and emotional security (Cohen & Wills, 1985; Fritz et al., 2023). The results also align with Ecological Systems Theory, emphasizing that adult psychological functioning remains influenced by contemporary interpersonal and environmental systems rather than childhood experiences alone (Fritz et al., 2023; Bronfenbrenner & Morris, 2006).

Although the interaction effect was modest, it has important practical implications because support access represents a modifiable environmental

resource. Counselling services, peer-support programmes, family interventions, workplace mental-health initiatives, and community support systems may substantially reduce the long-term psychological impact of childhood adversity. Given increasing awareness of mental health within India, expanding access to supportive psychological resources may represent an effective preventive strategy for adults with histories of developmental adversity.

5.5 Integrated Interpretation

Taken together, the findings support an integrated developmental model in which adverse childhood experiences increase vulnerability to psychological distress, whereas positive childhood experiences strengthen emotional regulation, resilience, and adaptive functioning. Emotional regulation partially explains how childhood adversity influences adult anxiety, while support access reduces the strength of this relationship by functioning as a protective environmental resource.

The study contributes to developmental psychology by integrating developmental risks, protective childhood experiences, psychological mechanisms, and contemporary environmental resources within a single empirical framework. Unlike many previous investigations that examine these constructs independently, the present findings demonstrate that adult psychological well-being emerges through multiple interacting developmental pathways rather than a single causal process.

The study also extends existing evidence within the Indian context, where relatively few investigations have simultaneously examined adverse childhood experiences, positive childhood experiences, emotional regulation, resilience, and support access among community adults. The findings therefore provide culturally relevant evidence supporting the applicability of developmental psychopathology, attachment theory, resilience theory, ecological systems theory, and positive psychology within an Indian

population (Dánielsdóttir et al., 2024; Han et al., 2023).

Overall, the results indicate that childhood adversity should not be viewed as an irreversible developmental outcome. Instead, emotionally supportive childhood experiences, adaptive emotional regulation, resilience, and accessible support systems collectively promote healthier psychological functioning throughout adulthood. This integrated perspective provides a stronger foundation for prevention, early intervention, trauma-informed care, and mental-health promotion than approaches focusing exclusively on either developmental risk or psychological strengths alone.

VI. CONCLUSION

6.1 Conclusion

This study examined the long-term influence of adverse childhood experiences (ACEs) and positive childhood experiences (PCEs) on adult emotional and psychological well-being using an integrated developmental framework. The findings demonstrate that childhood experiences continue to influence psychological functioning well into adulthood through both direct and indirect pathways. Consistent with developmental psychology and resilience theory, adverse childhood experiences were associated with higher levels of anxiety, depression, and perceived stress, whereas positive childhood experiences predicted stronger emotional regulation, resilience, and better sleep quality.

Beyond these direct associations, emotional regulation emerged as a significant psychological mechanism linking childhood adversity with adult anxiety, while support access functioned as an important protective resource that weakened the adverse effects of childhood experiences on psychological distress. These findings highlight that adult mental health is shaped not solely by developmental adversity but also by positive developmental experiences, adaptive emotional competencies, and supportive interpersonal environments.

Overall, the study supports a multidimensional developmental perspective in which developmental risks and protective experiences coexist and jointly influence psychological outcomes across the lifespan. The findings contribute to contemporary developmental psychology by integrating adverse childhood experiences, positive childhood experiences, emotional regulation, and support access within a single empirical framework using evidence from an Indian adult population.

6.2 Theoretical Contributions

The study makes several theoretical contributions. First, it extends developmental psychopathology by simultaneously examining developmental risks and protective childhood experiences rather than focusing exclusively on childhood adversity. Second, it empirically demonstrates the mediating role of emotional regulation and the moderating role of support access, thereby explaining both **how** and **under what conditions** childhood experiences influence adult psychological well-being. Third, by integrating Attachment Theory, Developmental Psychopathology, Ecological Systems Theory, Resilience Theory, and Positive Psychology, the study proposes a comprehensive developmental model that advances understanding of lifelong psychological adjustment. Finally, the findings contribute culturally relevant evidence from India, where integrated developmental models remain comparatively underexplored.

6.3 Practical Implications

The findings have important implications for mental-health professionals, educators, policymakers, and organizations. Routine assessment of childhood experiences during psychological evaluation may facilitate earlier identification of individuals at greater risk of anxiety, depression, and chronic stress. Trauma-informed counselling programmes should complement the assessment of childhood adversity with interventions that strengthen emotional regulation and resilience (SAMHSA, 2023). Family-based prevention initiatives, positive parenting programmes, and school

mental-health services may foster positive childhood experiences that promote lifelong psychological well-being. Expanding access to counselling services, peer-support networks, workplace mental-health programmes, and community-based psychological resources may further reduce the long-term impact of childhood adversity by strengthening protective support systems.

6.4 Limitations and Future Research

Several limitations should be acknowledged. The cross-sectional design limits causal inference, and retrospective self-report measures may be influenced by recall bias. The purposive sampling approach may also restrict the generalizability of the findings beyond comparable community populations. In addition, support access was measured as a broad indicator and did not differentiate between family, peer, workplace, or professional sources of support.

Future research should employ longitudinal designs to examine developmental trajectories across different life stages and investigate additional psychological mechanisms, including attachment security, self-compassion, cognitive flexibility, and meaning in life. Multi-group analyses across gender, socioeconomic status, and cultural contexts would further strengthen understanding of developmental pathways. Future studies may also incorporate structural equation modelling and longitudinal mediation analyses to examine more complex developmental processes (Baldwin et al., 2023).

6.5 Final Remarks

Early childhood experiences leave enduring psychological footprints; however, they do not determine adult mental health in isolation. The present findings demonstrate that emotionally supportive childhood environments, adaptive emotional regulation, resilience, and accessible support systems substantially influence psychological adjustment across adulthood. Understanding mental health through an integrated developmental lens shifts attention

from identifying developmental risk alone toward strengthening protective experiences and psychological resources throughout the lifespan. Such an approach provides a stronger foundation for prevention, trauma-informed practice, and evidence-based mental-health promotion while contributing to a more balanced understanding of human psychological development.

REFERENCES

1. Afifi, T. O., Salmon, S., Taillieu, T., et al. (2023). Adverse childhood experiences and mental disorders across the lifespan. *Social Psychiatry and Psychiatric Epidemiology*, 58, 1649–1663.
2. Baldwin, J. R., Caspi, A., Meehan, A. J., Ambler, A., Arseneault, L., Fisher, H. L., Harrington, H., Matthews, T., Odgers, C. L., Poulton, R., Ramrakha, S., Moffitt, T. E., & Danese, A. (2023). Population versus individual prediction of poor health from childhood adversity. *JAMA Psychiatry*, 80(5), 465–474.
<https://doi.org/10.1001/jamapsychiatry.2023.0153>
3. Bethell, C. D., Jones, J., Gombojav, N., Linkenbach, J., & Sege, R. D. (2019). Positive childhood experiences and adult mental and relational health in a statewide sample. *JAMA Pediatrics*, 173(11), e193007.
<https://doi.org/10.1001/jamapediatrics.2019.3007>
4. Bornstein, M. H. (2022). *Handbook of parenting* (3rd ed.). Routledge.
5. Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. Basic Books.
6. Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner (Ed.), *Handbook of child psychology* (6th ed., Vol. 1, pp. 793–828). Wiley.
7. Center on the Developing Child. (2023). *InBrief: The science of early childhood development*. Harvard University.
8. Cicchetti, D., & Toth, S. L. (2021). Child maltreatment and developmental psychopathology. *Development and Psychopathology*, 33(5), 1665–1678.
<https://doi.org/10.1017/S095457942100089X>
9. Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310–357.
<https://doi.org/10.1037/0033-2909.98.2.310>
10. Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage.
11. Dagan, O., Madigan, S., Groh, A. M., et al. (2024). Attachment across the lifespan and mental health:

- Recent advances and future directions. *Current Opinion in Psychology*, 57, 101818.
12. Danielsdóttir, H. B., Baldwin, J. R., Caspi, A., et al. (2024). Childhood adversity and adult mental health: A genetically informed longitudinal investigation. *Nature Mental Health*, 2(2), 128–138.
 13. Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 00149.
 14. Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine*, 14(4), 245–258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
 15. Fritz, J., de Graaff, A. M., Caisley, H., van Harmelen, A.-L., & Wilkinson, P. O. (2023). A systematic review of resilience following childhood adversity. *Clinical Psychology Review*, 100, 102235.
 16. Gee, D. G. (2021). Early adversity and the developing brain. *Biological Psychiatry*, 89(2), 107–108.
 17. Gross, J. J. (2024). Emotion regulation: Current status and future prospects. *Annual Review of Psychology*, 75, 1–28.
 18. Groh, A. M., Fearon, R. M. P., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Roisman, G. I. (2022). Attachment in the twenty-first century. *Current Opinion in Psychology*, 43, 10–15.
 19. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2022). *Multivariate data analysis* (9th ed.). Cengage.
 20. Halfon, N., & Forrest, C. B. (2018). The emerging theoretical framework of life course health development. In N. Halfon et al. (Eds.), *Handbook of life course health development* (pp. 19–43). Springer.
 21. Han, Y., Miller, G., & Sege, R. D. (2023). Positive childhood experiences and adult mental health: A systematic review. *Child Abuse & Neglect*, 143, 106291.
 22. Hughes, K., Bellis, M. A., Hardcastle, K. A., et al. (2017). The effect of multiple adverse childhood experiences on health: A systematic review and meta-analysis. *The Lancet Public Health*, 2(8), e356–e366.
 23. Lacey, R. E., & Minnis, H. (2024). Childhood adversity and adult mental health: Current evidence and future directions. *The Lancet Psychiatry*, 11(2), 115–127.
 24. Madigan, S., Racine, N., Vaillancourt, T., et al. (2023). Childhood adversity and long-term mental health outcomes: A meta-analysis. *The Lancet Psychiatry*, 10(4), 278–289.
 25. Masten, A. S. (2021). Resilience of children in disasters: A multisystem perspective. *International Journal of Psychology*, 56(1), 1–11.
 26. Merrick, M. T., Ports, K. A., Ford, D. C., et al. (2023). Vital directions in adverse childhood experiences research and prevention. *American Journal of Preventive Medicine*, 64(6), 897–906.
 27. McCullen, C., Weissman, D. G., & McLaughlin, K. A. (2023). Emotion regulation as a mechanism linking childhood adversity and adult psychopathology. *Current Opinion in Psychology*, 49, 101514.
 28. McLaughlin, K. A., Colich, N. L., Rodman, A. M., & Weissman, D. G. (2021). Mechanisms linking childhood trauma and psychopathology. *Annual Review of Clinical Psychology*, 17, 321–350.
 29. Narayan, A. J., Lieberman, A. F., & Masten, A. S. (2024). Developmental resilience after childhood adversity. *Annual Review of Developmental Psychology*, 6, 231–256.
 30. Nelson, C. A., Sheridan, M. A., & Fox, N. A. (2024). Early adversity and neurodevelopment. *Nature Reviews Psychology*, 3(1), 20–36.
 31. Ryff, C. D. (2022). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Annual Review of Psychology*, 73, 679–708.
 32. Şanlı, D., Yıldız, M., & Demir, E. (2024). Positive childhood experiences and adult psychological adjustment: A systematic review. *Journal of Affective Disorders*, 356, 481–492.
 33. Shonkoff, J. P., Boyce, W. T., & McEwen, B. S. (2021). Neuroscience, molecular biology, and the childhood roots of health disparities. *JAMA*, 326(22), 2252–2253.
 34. Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology*, 34(2), 125–137.
 35. Substance Abuse and Mental Health Services Administration. (2023). *SAMHSA's concept of trauma and guidance for a trauma-informed approach*. U.S. Department of Health and Human Services.
 36. Ungar, M. (2021). *Multisystemic resilience: Adaptation and transformation in contexts of change*. Oxford University Press.
 37. VanderWeele, T. J. (2023). Positive psychology and flourishing: New directions for public health. *Annual Review of Public Health*, 44, 1–18.
 38. Weissman, D. G., Lambert, H. K., Rodman, A. M., et al. (2022). Emotion regulation and the developmental consequences of childhood adversity. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 7(9), 876–886.
 39. World Health Organization. (2022). *World mental health report: Transforming mental health for all*. World Health Organization.
 40. World Health Organization. (2023). *Comprehensive mental health action plan 2013–2030 (updated edition)*. World Health Organization.