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The intergenerational transmission of culture through attachment-based parenting practices and their effect on child neurology: A systematic review

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THE INTERGENERATIONAL TRANSMISSION OF CULTURE THROUGH ATTACHMENT-BASED PARENTING PRACTICES AND THEIR EFFECTS ON CHILD NEUROLOGY: A SYSTEMATIC REVIEW

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DEDICATION

This dissertation is dedicated to my parents and friends for their unwavering support, humor, and love, without which this milestone would not have been possible.

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ABSTRACT

The process of intergenerational transmission process is complex and involves a dynamic exchange of explicit teachings, implicit cues, and lived experiences within the parent-child relationship. This systematic review examined the intricate relationship between the intergenerational transmission of cultural values, attachment-based parenting, and child neurology through a mixed-methods approach. Findings suggest that culture is transmitted via intergenerational transmission in the parent-child dyad through parental security and trust, adverse childhood experiences (ACEs), and cultural influences on parenting practices. Moreover, the literature suggests that attachment-based parenting affects the intergenerational transmission of culture, values, and beliefs through the parent-child relationship quality, open communication, and emotional bonding. Incidentally, these parental qualities correlate highly with authoritative parenting practices. Moreover, results imply that attachment-based parenting affects the neurology of a child through enhanced brain development, positive neurological outcomes, buffering adversity, and greater volumes in specific brain regions. Clinical implications suggest that attachment-based interventions can be beneficial in addressing mood and neurodevelopmental disorders in children, particularly in the context of intergenerational transmission of ACEs and acculturation challenges in migrant families.

Keywords: attachment-based parenting, child neurology, cultural transmission, intergenerational, parental responsiveness, emotional regulation, cultural identity, parent-child relationships, cultural continuity, intervention strategies

Chapter 1: Background and Rationale

Statement of the Problem

The intricate interplay between intergenerational transmission, attachment-based parenting, and child neurology leads to complex parent-child dynamics and constitutes a multifaceted field of study. *Intergenerational transmission*, as defined by the American Psychological Association (APA; n.d.), refers to the passing down of cultural beliefs, values, and customs from one generation to another. This process is essential in shaping the behavior of both intra and intergroup dynamics. The APA also defines culture as a comprehensive set of deeply ingrained norms, values, and beliefs that serve as a guiding force for behavior. The relationship between culture and intergenerational transmission is crucial in understanding parenting and the parent-child relationship. It is important to recognize the role that cultural beliefs and values play in shaping these relationships and how they are passed down from one generation to another. Parents extend their concerns beyond their children's immediate cultural upbringing to encompass the well-being and cultural development of subsequent generations, including grandchildren (Spiro, 2020). This broad intergenerational perspective sheds light on the complexities involved in shaping cultural values across generations.

The process of intergenerational transmission is complicated and involves a dynamic exchange of explicit teachings, implicit cues, and lived experiences within the parent-child relationship. Parenting, a pivotal component of learning and relating to others, serves as a conduit for the transmission of cultural legacies. The concept of child rearing encompasses a broad range of activities, actions, and attitudes that shape a child's worldview (Baumrind, 1991). Mindful of subsequent generations, parents may directly and indirectly influence their children’s and grandchildren's upbringing, thus introducing a dual dimension to their concern for cultural

transmission (Spiro, 2020). Consequently, the influence of parenting styles, ranging from authoritarian to permissive and rule-directed to relational, is crucial in shaping the process of cultural transmission.

The transmission of cultural beliefs from parents to children is crucial for fostering social cohesion, strengthening collective identity, and cultivating interpersonal bonds (Hughes et al., 2006). As suggested by Chao (1994), parenting style plays a significant role in facilitating or hindering the passage of cultural values. Moreover, examining how attachment quality influences this transmission offers valuable insights into the emotional foundations of identity formation (Sroufe et al., 1999). These sociocultural dynamics intricately intertwine with the neurobiological processes shaping human development.

From a neurobiological perspective, early experiences have lasting effects on the developing brain, affecting emotional regulation, social interactions, and cognitive function (Nelson & Gabard-Durnam, 2020). In the field of child neurology, researchers have studied the neural mechanisms of human development and how initial interactions shape the brain (Perry & Szalavitz, 2017). This understanding emphasizes the profound influence of parent-child dynamics on emotional well-being, cognitive abilities, and adaptive behaviors later in life, as demonstrated by intricate neurobiological mechanisms (Teicher et al., 2016).

Together, these perspectives highlight the complex interplay between the factors involved in the transmission of cultural values across generations, shedding light on the processes through which individuals internalize and propagate cultural norms. This systematic review aimed to investigate the crucial role of parental bonding in perpetuating cultural values. By exploring the intersection between attachment theory and cultural transmission, this systematic review sought to elucidate how attachment-based parenting practices influence the dissemination of cultural

traditions, values, and beliefs across generations. Additionally, this systematic review aimed to assess the impact of attachment-based parenting on neurological development in children. This study aimed to deepen understanding of the intricate dynamics between parenting, cultural continuity, and child neurodevelopment, providing insights into both theoretical frameworks and practical applications for promoting cultural resilience and familial well-being across generations.

Transmission of Culture in the Parent-Child Relations

Definitions and Mechanisms

Cultural transmission is essential for promoting effective social integration (Schönpflug, 2008). Intergenerational and multigenerational transmissions are crucial, as parents act as critical influencers in instilling proper values and beliefs in their children. This transmission involves the transfer of cultural elements across generations, a process that is often facilitated by caregivers. The success of social integration depends, in part, on the successful transmission of cultural elements, which ensures the continuity and reinforcement of societal norms.

Cultural transmission is a complex and dynamic process that entails the ongoing transfer of cultural values, beliefs, norms, and practices from one generation to another (Barnett, 2008). The preservation of cultural heritage is crucial as it serves as a means of preserving identity and promoting a collective sense of belonging among communities. The significance of cultural transmission extends beyond simple information transfer; it is crucial for promoting community unity and strength. Cultural transmission, which encompasses both tangible and intangible elements, is facilitated through explicit teachings, rituals, and implicit cues and is a vital mechanism for passing down cultural values, beliefs, norms, and practices from one generation to the next (Barnett, 2008). Preservation of cultural heritage is vital for safeguarding identity and

promoting a sense of belonging among communities. A holistic approach to cultural transmission ensures that the essence of culture, both tangible and intangible, is transmitted to future generations. It is imperative to prioritize the effective practice and promotion of cultural transmission to ensure the continued vitality of cultural groups over time (Hughes et al., 2006).

Barnett (2008) emphasized the multidimensional nature of cultural transmission, underscoring its role in the communication of tangible practices and the conveyance of intangible elements such as shared narratives, worldviews, and emotional expressions. This comprehensive approach ensures that the essence of culture, encompassing both tangible and intangible aspects, is passed on to successive generations. The significance of cultural transmission highlights the need to prioritize effective practices and promotions.

Cultural transmission is a mechanism for adapting and evolving cultural practices within changing social contexts (Cavalli-Sforza & Feldman, 1981). As societies change, cultural transmission allows for selective retention of cultural elements that are essential for identity and communal well-being. This process becomes dynamic and adaptive, facilitating the continuity of core cultural values while allowing the necessary adjustments to meet the challenges of evolving societal dynamics.

Cultural transmission can occur in various ways, both explicitly and implicitly, through intricate interactions between parents and their children. Explicit mechanisms involve intentional efforts by parents to impart cultural knowledge directly through activities such as storytelling, formal education, and intentional modeling of behaviors aligned with cultural norms (Hughes et al., 2006). By contrast, implicit mechanisms operate seamlessly within everyday life, with cultural elements transmitted through shared experiences, routines, and observed behaviors in the familial context.

Implicit transmission occurs organically, often outside conscious awareness, as children absorb the subtleties and nuances of their cultural identity during daily interactions, forming a deep and intuitive understanding of their heritage (Hughes et al., 2006). This immersive and experiential learning process contributes to the assimilation of cultural values, shaping the child's worldview holistically. The combined influence of explicit and implicit mechanisms—influenced by Bowen's (1978) theory—in the parent-child relationship ensures a comprehensive approach to cultural transmission, enriching children's connection to their cultural heritage.

Parenting as a Transmission Tool

Cultural transmission, which involves the cross-generational exchange of cultural knowledge, values, and beliefs, is a vital process, similar to parenting in its importance (LeVine, 1973b). Mead (1950) illuminated perspectives on the intricate process of shaping cultural identities. Moreover, LeVine (1973a) emphasized the importance of modeling and parental techniques in shaping cultural norms and individual identity through Mead's examination of the intergenerational transmission of culture. Understanding the processes of cultural transmission across generations is essential for designing interventions and programs that promote positive behaviors and values, making Mead's (1950) study on culture and commitment a valuable resource for enhancing family functioning.

According to Phinney (1990), the way an individual identifies with a particular cultural group and feels a sense of belonging and attachment to it can have a profound and lasting influence on their values, beliefs, and behaviors. Parents play a crucial role as cultural agents by transmitting and fostering a cultural identity to their offspring during childhood. Children actively learn cultural behaviors and practices from their immediate familial environment, which shapes their understanding of their cultural backgrounds (Hughes et al., 2006). The development

of children's cultural identity is encouraged through various activities including storytelling, participating in cultural rites, and incorporating cultural traditions into daily routines. Furthermore, parents' influence on cultural identity extends beyond the immediate family. Children observe how their parents navigate and negotiate their cultural identity within a broader societal context, gaining insight into the complexities of cultural belonging and adaptation. In this way, parents mediate between a broader culture and the family's cultural heritage, actively shaping their children's cultural identity narratives (Harkness & Super, 2002). The intricate interplay between parental influence and cultural identity underscores the importance of understanding these dynamics to foster successful cultural transmission and to promote individuals' well-being within diverse societies.

Parenting practices play a crucial role in cultural transmission, encompassing a spectrum of behaviors, attitudes, and strategies that parents employ to raise their children within a cultural context. These practices serve as vehicles through which cultural values are imparted and cultural identity is nurtured. Experts in parenting and clinical practice have studied various aspects of the relationship between parents and children, including broader parenting strategies (e.g., Beijan, 2020; Siegel, 2004; Siegel & Bryson, 2021).

According to McGillicuddy-De Lisi and Sigel (1995), early caregivers' attitudes significantly shape their children's worldview, contributing to the maintenance of social order within and across communities in which members share similar cultural concepts and beliefs. Bowen's (1978) family systems theory highlights the importance of the interconnectedness of family members and the passing down of behavior from one generation to another (Kerr & Bowen, 1988). As such, an individual's capacity to navigate emotional intimacy and autonomy within interpersonal relationships is predicated on the differentiation of the self. Bowen

postulated that the degree of differentiation established by each family member connects with life processes through generations. Families with greater levels of differentiation typically exhibit more organized and symptom-free life processes, whereas those with lower levels of differentiation often experience more disorganized and symptomatic life processes.

Santrock (2006) observed that parents often adopted styles similar to those experienced during their upbringing. Within the framework of cultural transmission, Bowen's (1978) theory suggests that cultural norms and behaviors are deeply ingrained within the family's emotional dynamics and exert a significant influence on cultural components throughout successive generations.

Hence, the strategies used by parents significantly impact the formation of cultural identity, and the presence of diverse cultures within families amplifies this influence. Parents function as powerful instruments for the dissemination of culture, promoting a sense of inclusion, cultivating the understanding and acceptance of various cultures, and establishing a strong basis for the cultivation of a comprehensive cultural identity in young individuals. Understanding the complex mechanisms of parental impact cultural transmission is essential for establishing conducive settings that foster cultural continuity, flexibility, and thriving of diverse cultural identities.

Attachment-Based Parenting and Transmission of Culture

Overview of Attachment Theory and Parenting

In the mid-20th century, Bowlby (1969) introduced the attachment theory, which provides valuable insight into the emotional bonds between newborns and their primary caregivers, especially parents. The fundamental premise of the attachment theory is that individuals, as inherently social creatures, possess a natural inclination to form robust emotional

connections or attachments with their caregivers (Ainsworth et al., 1978). Attachment is essential for emotional comfort and provides a secure base for children to explore their surroundings.

As per Bowlby's (1969) theory, attachment is an emotional connection that emerges between a child and its primary caregiver. This bond encompasses a child's feelings of security, exploration, and emotion regulation. This attachment bond is formed in early childhood and significantly influences children's socioemotional development (Ainsworth et al., 1978). Parents' concerns for subsequent generations necessitate attachment as a crucial element for understanding the transmission of cultural values (Spiro, 2020).

According to the attachment theory, parents or caregivers are considered significant figures in shaping the emotional development of their children during the parenting process. Specifically, individuals' socioemotional development, personality, and future interpersonal interactions are significantly influenced by the nature of their early caregiver-child relationship (Sroufe et al., 1999). As proposed in attachment theory, the establishment of secure attachments during the early stages of infancy serve as a fundamental basis for the subsequent cultivation of trust, self-regulation, and positive self-concept.

Ainsworth et al. (1978) categorized attachment types into four distinct groups: secure, avoidant, anxious, and disorganized. Per Ainsworth et al., a secure attachment style emerges when caregivers reliably meet a child's needs, thereby fostering a stable foundation for exploration. Children with secure attachment can communicate their needs directly and trust that their needs are being met (Ainsworth et al., 1978; Kim et al., 2021). Conversely, avoidant attachment arises when caregivers are less attentive, which leads children to become self-reliant. A child with avoidant attachment generally downplays the importance of relationships and subconsciously believes that their needs will not be met (Ainsworth et al., 1978). Anxious

attachment is the result of inconsistent caregiving methods that encourage children to suppress their needs and to have a sensitive nervous system. Children with this type of attachment style may tend to "act out" when triggered and believe that their needs cannot be met (Ainsworth et al., 1978). As such, children with anxious attachment tend to stay close to their caregivers. Finally, disorganized attachment is typically associated with traumatic experiences and is characterized by caregiver responses that exhibit irregularity and unpredictability, resulting in a strong fear of rejection and high anxiety (Kim et al., 2021). Such children often display an unpredictable mix of anxious and avoidant behaviors (Ainsworth et al., 1978). As indicated by Kim et al., parenting styles can contribute to the development of a child's attachment style.

Regarding parenting styles within the attachment framework, attachment-based parenting can align with various approaches, such as authoritarian, authoritative, permissive, or uninvolved (Baumrind, 1966, 1991; Kim et al., 2021). Each parenting style may contribute to the development of specific attachment patterns among children. A parenting style that combines a balanced mix of authority and responsiveness (e.g., clear standards), known as authoritative parenting, can nurture a secure attachment style in children, characterized by trust and emotional security (Kim et al., 2021). Authoritarian parenting, which involves imposing stringent expectations on children while exhibiting a lack of sensitivity (i.e., a lack of warmth), may result in an avoidant attachment style and emotional distance (Kim et al., 2021). Children under authoritarian rule often report that their caregivers have an autocratic parenting style (Kim et al., 2021). Permissive parenting, which features low expectations (e.g., lenient expectations), is known to lead to an ambivalent attachment style in offspring (Ainsworth et al., 1978). According to Kim et al., permissive parenting practices that lack consistency, as observed by Ainsworth et al. (1978) and Main and Solomon (1990), can lead to anxiety and uncertainty in children. By

contrast, uninvolved parenting, marked by low demands and unresponsiveness, may lead to a disorganized attachment style, especially when erratic and unpredictable caregiver responses are present (Ainsworth et al., 1978; Main & Solomon, 1990).

Attachment-based parenting highlights the profound influence of children's initial emotional connections on their overall development and growth. Secure attachments offer a foundation for emotional security, enabling children to explore the world confidently with a reliable and supportive base. These safe attachments also promote emotional control, positive interpersonal interactions, and development of a robust self-image (Thompson, 2014). As such, a child's happiness, exploration, and emotional growth are intricately linked to establishing a strong foundation for future well-being.

Attachment-Based Parenting and Cultural Transmission

Attachment-based parenting, which prioritizes the establishment of stable emotional connections between caregivers and children, is of utmost importance for maintaining and transmitting cultural values and customs. Secure attachment lays the groundwork for children's socioemotional development by fostering trust, emotional security, and the exploration of their surroundings (Ainsworth et al., 1978).

Within the context of cultural continuity, these strong bonds evolve into a steadfast foundation from which children can actively participate and assimilate cultural values. Phinney (1990) established a positive correlation between children's strong attachment security and their sense of belonging and connection with cultural groups. This emotional security allows them to approach their cultural heritage with curiosity and openness, thus facilitating positive engagement with cultural practices, rituals, and traditions.

The stability provided by secure attachments enables children to navigate the complexities of cultural identity more effectively, contributing to the continuity of cultural norms across generations. Furthermore, the establishment of secure bonds fosters effective communication within the family structure, facilitating the integration of cultural values into daily routines (Hughes et al., 2006).

Attachment-based parenting is an approach that can be adapted to suit specific cultural contexts. Cultural diversity encompasses various conventions, values, and parenting expectations that can be incorporated into an adaptable attachment-based parenting approach (LeVine, 1973a). One notable cultural adaptation observed in attachment-based parenting is the recognition of the distinction between collectivism and individualism. Collectivist societies may prioritize family solidarity, interdependence, and communalism, whereas individualistic cultures may focus on promoting independence while fostering emotional relationships (Triandis, 1995).

Parents practicing attachment-based parenting practices can accommodate for cultural variations by tailoring parenting goals to align with cultural ideals. For instance, some cultures may prioritize qualities such as obedience, resilience, and creativity, and attachment-based parenting can be adapted to reflect these values (Lamb, 2011). In addition, attachment-based parenting recognizes the significance of extended family members and communities in preserving cultural traditions (Weisner, 2002). By embracing attachment-based parenting, parents can promote a complete approach to cultural continuscity by evaluating broader social networks. This can be achieved by considering the impact of extended families on child-rearing practices and incorporating their dynamics into an attachment-based parenting approach.

Attachment-based parenting emerges as a dynamic force in cultural transmission, weaving secure attachments into the fabric of cultural continuity and adapting to diverse cultural

contexts (Rothbaum et al., 2000). By fostering secure emotional bonds and aligning with cultural values, this parenting style has become a powerful agent in shaping the cultural identity of future generations. Understanding the interplay between attachment-based parenting and cultural transmission is essential for creating culturally responsive parenting interventions and promoting diverse cultural identities. The implications of attachment-based parenting extend beyond individual well-being, influencing the collective cultural tapestry that binds societies across generations.

Attachment-Based Parenting and Child Neurology

Overview of Attachment Theory, Parenting, and Neuroscience

Neurobiological studies of attachment have revealed a significant impact of early caregiving experiences on the developing brain (e.g., McKenzie et al., 2024; Merz et al., 2009; Takeuchi et al., 2015). These investigations have focused on the crucial brain regions associated with emotional regulation, stress responses, and cognitive function. Understanding the neurological processes involved in attachment serves as the foundation for understanding how these early encounters influence children's socioemotional and cognitive development.

The limbic system, including the amygdala and hippocampus, has been identified as a crucial area of interest in the study of emotional processing and memory formation in relation to attachment (Callaghan & Tottenham, 2016; Schore, 2001). Parenting practices that play a vital role in attachment are inextricably linked to these neural mechanisms (Schore, 2001). Providing responsive care that is sensitive and consistent has been linked to the development of the brain regions essential for emotional resilience and cognitive functioning (Teicher et al., 2016). In contrast, inconsistent or unresponsive caregiving can interfere with the stress response by

disrupting the hypothalamic-pituitary-adrenal axis (HPA) and cortisol levels (Gunnar & Quevedo, 2007).

The introduction of parenting practices within the neurobiological discourse on attachment highlights the bidirectional nature of the parent-child relationship (Schore, 2001). Parental behavior, informed by attachment-based principles, influences neural plasticity—the brain's ability to reorganize itself based on experiences. This intricate interplay between caregiving practices and neurobiology underscores the profound impact of early experiences on shaping the neural architecture that forms the foundation of future emotional and cognitive well-being (Cicchetti & Toth, 2005; Tottenham, 2020).

Investigations of the neurological basis of attachment have provided a thorough understanding of the neuronal processes involved in early caregiving (Ainsworth et al., 1978; Bowlby, 1969). Examination of the intricate relationship between neural plasticity and parenting practices has revealed a considerable reciprocal impact of attachment on brain maturation (Schore, 2001; Tottenham, 2020). Adopting a comprehensive perspective enhances understanding of the caregiver's substantial influence on the neurological foundations of attachment (Cicchetti & Toth, 2005).

Impact on a Child's Neurology

Attachment-based parenting strategies substantially affect the development of neural plasticity, which is the ability of the brain to alter and adjust in response to various experiences (e.g., parental responsiveness, sensitive caregiving, secure base provision). Specific techniques that promote optimal development of the brain regions responsible for emotional regulation, particularly the prefrontal cortex, are characterized by sensitivity, responsiveness, and consistency (Teicher et al., 2016). The impact of early caregiving on the prefrontal cortex, which

is responsible for executive functions, including emotional regulation and decision making, is significant.

Neurobiological response to stress is a crucial aspect of attachment-based parenting. Continual and encouraging care has been associated with the control of stress response mechanisms, such as the HPA pathway. In situations of secure attachment, children learn to manage stress effectively, leading to optimal cortisol regulation (Gunnar & Quevedo, 2007). The significance of this control lies in its ability to promote harmonious stress reactions.

The limbic system, which comprises the amygdala, is crucial for emotional processing and the formation of attachment-related memories (Schore, 2001). Using attachment-based parenting techniques contributes to the development of a well-regulated amygdala that enables children to perceive and respond to emotional cues effectively. This ultimately enhances their emotional intelligence and improves their ability to understand social situations.

Oxytocin, often referred to as the "love hormone," is crucial for fostering social connections and forming strong attachment bonds (Feldman, 2012). Attachment-based parenting practices, such as physical closeness, affectionate touch, and responsive interactions, stimulate the release of oxytocin, reinforce the parent-child bond, and foster feelings of trust and security (Feldman, 2012; Schore, 2001).

Neuroimaging studies have provided compelling evidence of the neural correlates of secure attachment (e.g., Schore, 2001; Tottenham, 2020). Children who experience secure attachments exhibit enhanced connectivity between the brain regions associated with emotional regulation, empathy, and social understanding (Tottenham, 2020). This establishment of brain patterns serves as the fundamental basis for promoting positive socioemotional development and cultivating healthy interpersonal connections in adulthood.

The neurodevelopment of a child is influenced by attachment-based parenting, which involves a complex interaction between brain plasticity, regulation of the stress response, development of the amygdala, release of oxytocin, and construction of neural correlates associated with secure bonds. As such, the significance of early caregiving experiences in shaping children's emotional and cognitive development has long-lasting effects.

Exploring the Intersectionality of Parenting, Cultural Transmission, and Child Neurology

The study of parenting practices, intergenerational transmission of culture, and intricate dynamics of child neurology are critical areas of research that intersect in shaping the development and well-being of individuals across generations. Comprehending the complex interplay between these factors is vital for understanding how cultural values, attachment-based parenting, and early caregiving experience influence children's socioemotional and cognitive development.

The intergenerational transmission of culture involves the transfer of cultural beliefs, values, and practices from one generation to the next, with parents serving as critical agents in this process. Parents impart cultural knowledge through explicit teachings, implicit cues, and lived experiences within the parent-child relationship. Given the foregoing, the parent-child relationship is essential for promoting social cohesion, strengthening collective identity, and cultivating interpersonal bonds within communities.

Four distinct attachment-based parenting styles were identified, each with a unique approach to raising children (Kim et al., 2021). Authoritarian parents enforce strict rules and expect obedience without providing much explanation. In contrast, authoritative parents set clear rules and expectations while being responsive and nurturing, fostering open communication and mutual respect. Permissive parents are lenient and indulgent, often avoiding confrontation and

allowing considerable freedom, whereas uninvolved parents are disengaged and neglectful, showing little interest or involvement in their children's lives. These varying attachment-based parenting styles have a significant impact on parent-child dynamics and the transmission of cultural values and behaviors across generations.

In the context of this systematic review, child neurologists investigate the neurobiological mechanisms that underlie brain development in early childhood and how early caregiving experiences shape emotional regulation, social interactions, and cognitive functions. Literature in this field has demonstrated that attachment-based parenting practices can have a profound impact on brain maturation, stress response mechanisms, and the formation of neural correlates associated with secure attachment bonds (e.g., Schore, 2001; Teicher et al., 2016; Tottenham, 2020).

This systematic review aimed to delve into the complex relationships between attachment-based parenting, intergenerational transmission of culture, and child neurology. By examining how these factors intersect and influence each other, this review sought to elucidate the mechanisms that contribute to cultural continuity, familial well-being, and individual development across generations. Through a comprehensive review of the relevant literature, theoretical frameworks, and empirical research, this systematic review strived to provide insights for fostering positive parenting practices, cultural resilience, and optimal neurodevelopmental outcomes in children.

Rationale, Primary Aims, and Research Questions

The complex interplay between intergenerational cultural transmission, attachment-based parenting, and child neurological growth is a subject of limited research. The present body of literature fails to provide an adequate exploration of the connection between parenting

techniques grounded in attachment and the transmission of cultural values, as well as their impact on children's neurological growth. This systematic review explored the complex interconnections among the transmission of cultural values, parenting styles rooted in attachment, and neurological development in children.

The primary objective of this review was to investigate the significance of parenting practices rooted in attachment in the context of transmitting cultural traditions across generations. Additionally, this systematic review examined the impact of attachment-based parenting on children's neurological development during intergenerational cultural transmission. To achieve these goals, the following research questions (RQs) were posed:

- RQ1: How is culture transmitted via intergenerational transmission in parent-child relationships?
- RQ2: How does attachment-based parenting affect intergenerational transmission of culture, values, and beliefs?
- RQ3: How does attachment-based parenting affect a child neurology?

Summary

In conclusion, the intricate interplay among parenting practices, cultural transmission, and child neurology underscores the complexity of factors shaping individual development across generations. By understanding how cultural values are transmitted through intergenerational relationships and how attachment-based parenting styles influence both cultural continuity and neurological development, valuable insights can be gleaned to promote positive outcomes for children and families. The diversity of attachment-based parenting styles significantly impacts parent-child dynamics and the transmission of cultural values. Furthermore, the neurobiological mechanisms underlying attachment-based parenting highlight the profound

impact of early caregiving experiences on brain maturation and emotional well-being. This systematic review aimed to shed light on these complex relationships and provide a foundation for further research and interventions aimed at supporting healthy family dynamics, cultural resilience, and optimal neurodevelopmental outcomes for children.

Chapter 2: Methodology and Procedures

This systematic review investigated attachment-based parenting in the context of the intergenerational transmission of culture while examining its effects on children's neurology, a subject marked by a limited body of literature and diverse methodologies. The implementation of a mixed-methods approach was deemed highly suitable for this context as it incorporated both quantitative and qualitative studies, thereby allowing for a more inclusive investigation of the research topics (Boland et al., 2017). Specifically, quantitative studies contributed numerical data on the prevalence and correlation of specific attachment styles within intergenerational transmission contexts as well as their effects on child neurobiology. Conversely, qualitative studies offered in-depth insights into lived experiences, perceptions, and contextual nuances surrounding attachment-based parenting and their influence on the intergenerational transmission of culture, values, and beliefs.

To comprehensively understand the intergenerational transmission of culture, attachment-based parenting, and child neurology, it was essential to adopt an inclusive approach that considered the diverse range of approaches used to study these areas. Therefore, a mixed-methods approach was essential for fully understanding the intricacies and multifaceted nature of this phenomenon. This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Boland et al., 2017).

Eligibility Criteria

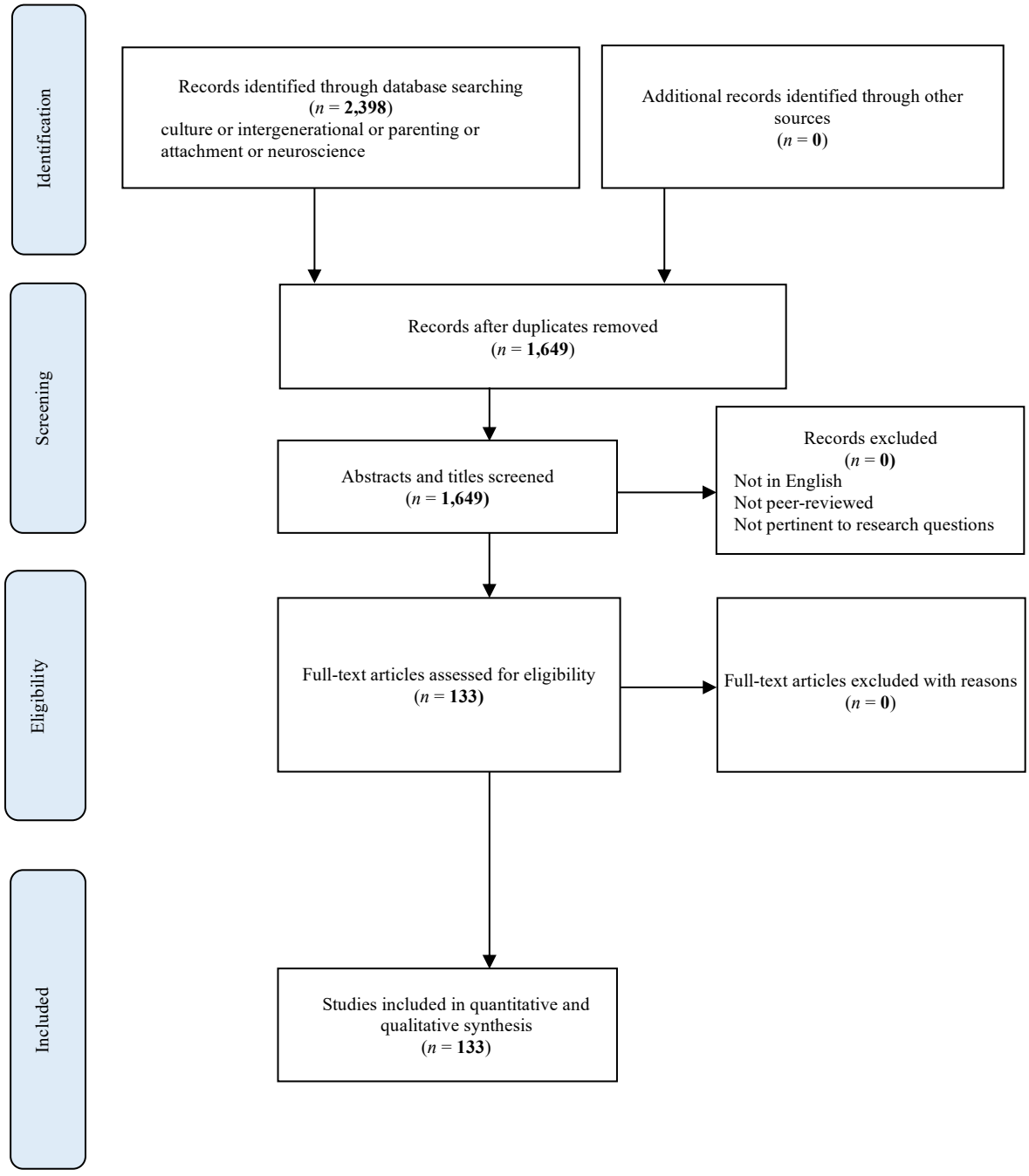
The criteria used to select articles in this review were designed to evaluate parenting attachment styles in the context of intergenerational cultural transmission and child neurology. The review included studies published in English and subjected to peer review; both quantitative and qualitative research methods were deemed eligible. Dissertations, abstracts, and book

reviews were excluded. Article selection primarily relied on the inclusion criteria in the following section with no explicit use of the study quality criteria.

The review included peer-reviewed articles that focused on parent-child relationships and multigenerational families, as well as the intergenerational transmission of culture, values, beliefs, and child neurology. There were no exclusions for publication year, and the inclusion criteria encompassed all sexes and racial/ethnic groups. As the systematic review incorporated qualitative data, articles were deemed eligible even in the absence of a formal assessment. The use of data from peer-reviewed journal articles exempted this systematic review from Institutional Review Board approval for human subjects (Appendix F). The research selection process is depicted in Figure 1 using a PRISMA flow diagram.

Figure 1

PRISMA Diagram



Search, Screening, and Selection Strategies

Search Plan

PubMed and PsycNet, along with EBSCO host databases such as PsycInfo and PsycArticles, were used. A comprehensive analysis of peer-reviewed articles and academic literature was conducted, focusing primarily on culture, intergenerational transfer, parenting, attachment, and neuroscience, as well as the critical brain functions associated with attachment-based relationships. The following search terms were used to find sources:

- *Attachment*: attachment, bonding, connection, relationship, attachment style, attachment theory, and bond
- *Culture*: culture, cultural, identity values, beliefs, perceptions, views, attitudes, opinions, viewpoints, perspectives, experiences, reflections, morals, and priorities
- *Intergenerational*: grandparent-child attachment, intergenerational, transgenerational, historical, multigenerational, parent-child interaction, grandparent-child relationship, parent-child attachment, grandparent-child interaction, parent-child cohesion, and grandparent-child cohesion
- *Neuroscience*: neuroscience, neurobiology, neurophysiology, brain, neuropsychology, and neurology
- *Parenting*: parenting, parent, parental, parenting styles, parenting practices, child rearing, and child development

Specific combinations of terms were combined and followed by various Boolean operators. Examples of search syntax include the following:

- (grandparent-child attachment or intergenerational or transgenerational or historical or multigenerational or parent-child interaction or grandparent-child relationship or parent-child attachment or grandparent-child interaction or parent-child cohesion or grandparent-child cohesion) AND (culture or cultural or identity or values or beliefs

or perceptions or views or attitudes or opinions or viewpoints or perspectives or experiences or reflections or morals or priorities)

- (attachment or attachment style or connection or bonding or relationship or attachment theory or bond) AND (parenting or parent or parental or parenting styles or parenting practices or child rearing or child development) AND (neuroscience or neurobiology or neurophysiology or brain or neuropsychology or neurology)

Screening and Selection Process

A detailed record of the selection and screening procedures was maintained using a spreadsheet (Appendix B). The records included the article's title, authors, search term ID number, search date, database, search syntax, specifiers for peer-reviewed and English languages, and the number of studies.

The process of selecting and screening the articles was divided into three stages (Appendix C). The initial phase involved evaluating the title, abstract, and keywords of each article. During the second stage of the evaluation process, the suitability of articles was assessed by reviewing their abstracts in depth. The full text of the articles was thoroughly examined to ensure eligibility, provided that it was deemed appropriate to do so. In the third phase, the full-text review incorporated inclusion and exclusion criteria. The preceding selection processes led to a conclusive determination in phase three regarding the inclusion or exclusion of articles. When concerns arose from the reviewer's article selection process, they were escalated to a dissertation chairperson for resolution.

Database Management

Data Extraction

The data extraction process involved utilizing a pilot-tested data extraction and collection form encompassing sections such as general information, design characteristics, and measurement types. To develop the data form used for the full-text review, the Cochrane Collaboration's "Data Collection Form for Intervention—RCTs and Non-RCTs" was adopted and modified to ensure compatibility with studies using any methodology. Each completed article was accompanied by its corresponding form, which was used to filter content. The publication details, eligibility characteristics, methodology, participant characteristics, outcomes/findings, limitations and mitigation strategies, conclusions, and additional information were extracted from each article (Appendix D).

Appraisal of Included Studies

Methodological Quality

Each qualifying article was assessed using an Individual Study Quality Assessment Form for areas such as the study's rationale, clarity of the article's objectives, methodology, and limitations (Appendix E). A Likert Scale from 0 (*weak*) through 3 (*strong*) was utilized to evaluate each article. The quality of each study was appraised concurrently with the data extraction process with a focus on the study's relevance to this systematic review's objectives.

Chapter 3: Results

The primary aims of this systematic review were to explore the methods by which cultural values are transmitted from parents to their offspring across generations (RQ1), to investigate the role of parenting practices rooted in attachment theory in the transmission of cultural beliefs and practices (RQ2), and to determine the impact of attachment-based parenting on children's neurological development (RQ3). The results herein are presented in the form of narrative summaries, complemented by quantitative data. In cases where statistical analysis was not feasible, a narrative summary was employed instead of a discussion of the quantitative results.

Search Results

The current systematic review identified 2,398 articles from a variety of digital databases, including PubMed, PsycNet, and EBSCO host databases such as PsycInfo and PsycArticles, using an established search string protocol outlined in Appendix A. Microsoft Excel's automated features facilitated the identification and removal of 749 duplicates, resulting in 1,649 articles being screened. To ensure the quality of the studies, only those that met the inclusion criteria, such as being peer reviewed and published in English, were included in the analysis.

A rigorous screening process was carried out on all 1,649 articles, as detailed in Chapter 2 and Appendices B and C. During this stage, each article's title, keywords, and abstract were thoroughly examined for their relevance to the three objectives of this systematic review. As a result, 1,516 articles were excluded due to their irrelevance to the research aims of this review or failure to meet the inclusion criteria (e. g., not peer reviewed or published in English). The remaining 133 articles were directly relevant (i.e., had a clearly articulated hypothesis or findings) to the research aims of this systematic review and were included in this review, as

illustrated in the PRISMA Flow Diagram (see Figure 1). A comprehensive list of the 133 articles included in this systematic review is provided in Appendix G.

All studies included in the review were published in English and underwent a peer review. A total of 133 articles were screened and categorized according to their relevance to the three RQs (Appendix D). Of these, 83 were selected for their relevance to RQ1, 14 for their relevance to RQ2, and 33 for their relevance to RQ3. It is important to note that there was an overlap between the three RQs, and there were multiple articles that provided insight into more than one area. To tackle this problem, it was occasionally necessary to carry out a secondary review of an article when it pertained to more than one research aim. Any disagreements were resolved through full-text review. The final decisions for all articles were made by one evaluator to ensure consistency and to avoid potential bias.

The evaluation of the quality of each article revealed a diverse range of quality from weak to strong. The results of the quality appraisal, as presented in Table 1, indicated that most studies were rated as exemplary (2%), good (63%), or strong (14%), while only 8% were rated as adequate and 13% as weak. Low-quality studies often lacked essential components, such as the reporting of racial and ethnic demographics, sex and gender, socioeconomic status (including educational attainment), and small sample size. In contrast, high-quality studies provided detailed information on participant demographics, including ethnicity, race, and sex, and clearly outlined the methodological design, limitations, and recommendations for future research.

Table 1

Summary of Quality Appraisal

R	*N = 133*	%
Exemplary	2	2
Strong	32	24
Good	84	63
Adequate	11	8
Weak	17	13

General Characteristics of Included Studies

The literature included in this analysis is listed extensively in Appendix G. Collectively, these studies were conducted internationally, with the majority originating from the United States (45, 33.8%), followed by Canada (12, 9.0%), China (9, 6.8%), Germany (6, 4.5%), Italy (6, 4.5%), Sweden (5, 3.8%), the Netherlands (4, 3.0%), the United Kingdom (4, 3.0%), Turkey (3, 2.3%), Kenya (3, 2.3%), Ireland (3, 2.3%), Australia (2, 1.5%), Bulgaria (2, 1.5%), Columbia (2, 1.5%), the Czech Republic (2, 1.5%), Japan (2, 1.5%), Jordan (2, 1.5%), Iran (2, 1.5%), the Philippines (2, 1.5%), Thailand (2, 1.5%), Singapore (2, 1.5%), Denmark (1, 0.8%), Hong Kong (1, 0.8%), Nigeria (1, 0.8%), Korea (1, 0.8%), Morocco (1, 0.8%), Slovenia (1, 0.8%), Switzerland (1, 0.8%), Taiwan (1, 0.8%), and Belgium (1, 0.8%). Eighteen articles did not specify a location.

The articles examined in this systematic review span a publication period from 1972 to 2023, with 42.9% of studies conducted between 2011 and 2020. Of the total articles, 103 were published in psychiatric or psychological journals, while the remaining 30 appeared in biology, neuroscience, and economics journals. The methodologies employed in the articles were predominantly mixed methods (38.4%), followed by quantitative (42.9%) and qualitative methods (7.5%). Furthermore, 18 articles did not specify their methodologies. The methodological designs utilized in the articles included randomized controlled trials, quasi-experimental designs, thematic analysis designs, crossover designs, and ethnographic approaches. The subsequent sections provide descriptions of sample sizes, participant demographics, and the main outcomes and findings for each RQ.

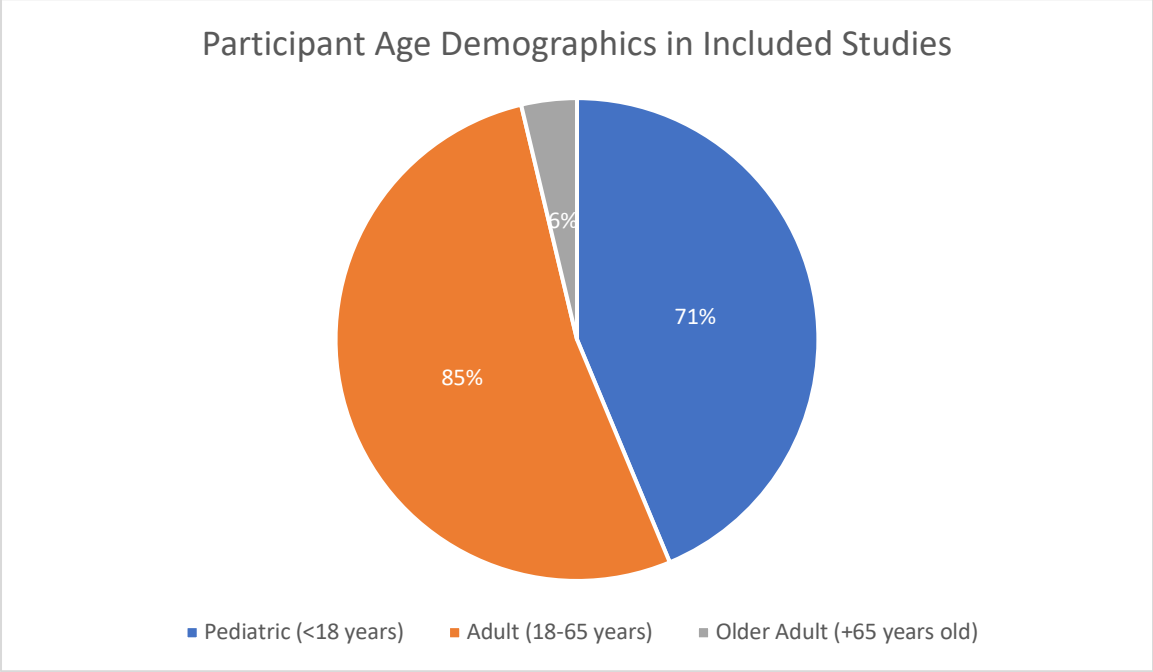
Demographics of Systematic Review Participants

Age

In a comprehensive review of 133 studies, the participants' ages were examined, as presented in Figure 2. Among these, 94 studies enrolled youth ranging from under 6 months to 17 years old, with an average age of 7.5 years. The age range for these participants was from 2 to 12 years. Furthermore, 113 studies involved participants ages 18 to 64 years, with an average age of 42.3 years. The age range for adults was between 35 and 50 years. Additionally, eight articles recruited participants over the age of 65, with an average age of 73.9 years and a range from 65 to 83 years.

Figure 2

Age Demographics

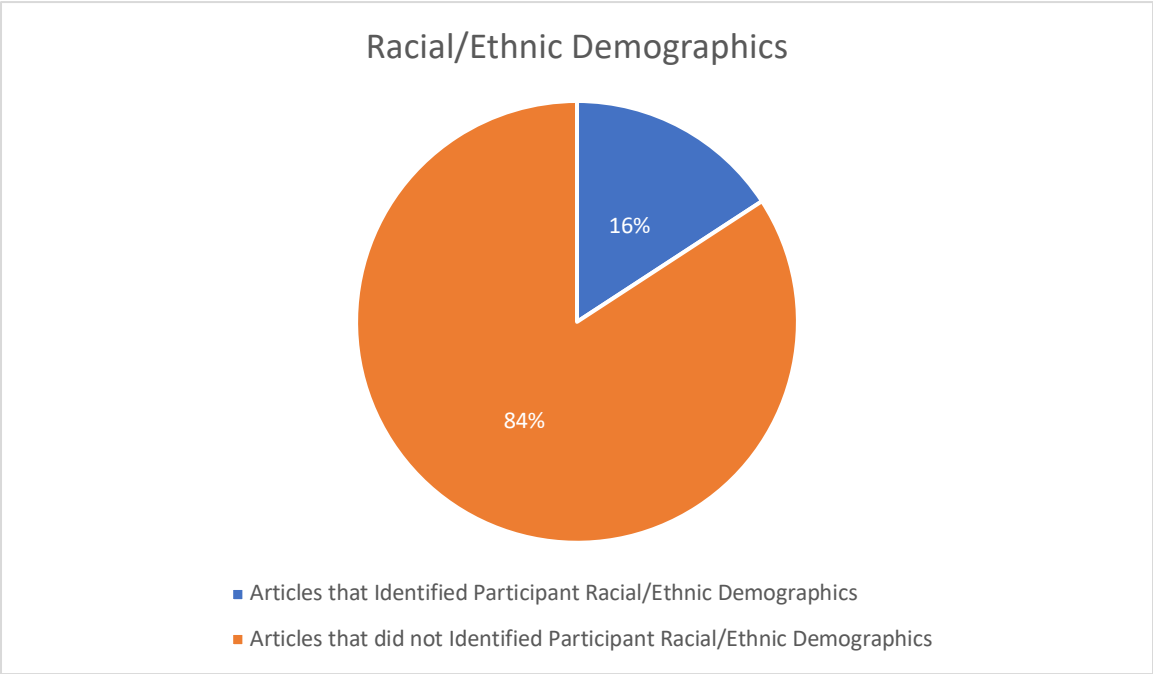


Racial and Ethnic Demographics

The present analysis considered 133 studies, of which 21 articles (15.8%) did not report the racial or ethnic backgrounds of their participants, while the remaining 112 articles (84.2%) provided this information (Figure 3). Among the studies that disclosed demographic details, the participant count varied between seven and 87 individuals.

Figure 3

Racial/Ethnic Demographics

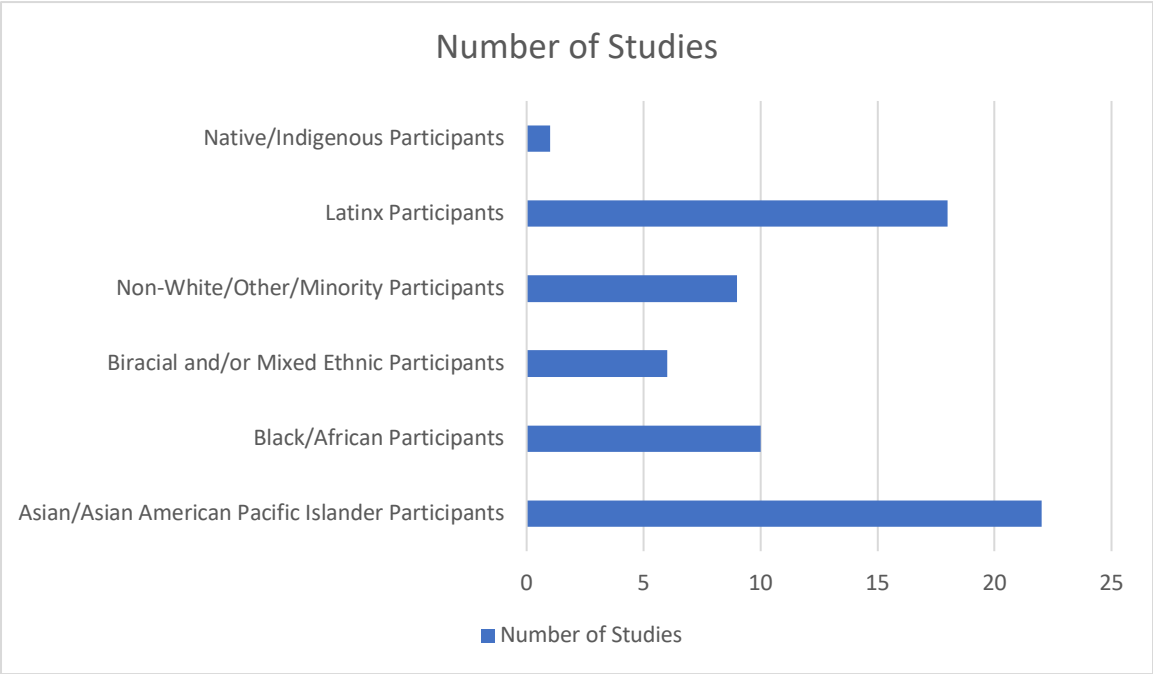


In examining the 133 studies, a majority revealed information on the ethnicity and/or race of their participants ($N = 127$; 95.5%), with 36.2% ($N = 46$) of these studies including individuals who identified as Black, Indigenous, or people of color (BIPOC) only. Conversely, the majority of studies ($N = 69$; 54.3%) involved participants who were White or European and BIPOC individuals. Only a small number of studies ($N = 12$; 9.4%) enrolled exclusively White or European participants.

Regarding the 46 articles reporting on BIPOC, the number of participants ranged from 11 to 50 individuals. As illustrated in Figure 4, 47.8% ($N = 22$) focused on Asian/Asian-American Pacific Islander participants, 21.7% ($N = 10$) focused on Black/African participants, 13.0% ($N = 6$) targeted biracial and/or mixed ethnic participants, 19.6% ($N = 9$) targeted non-White/other/minority participants, and 39.1% ($N = 18$) targeted Latinx participants. Only one study (2.2%) concentrated specifically on native/Indigenous participants.

Figure 4

Studies with BIPOC Participants



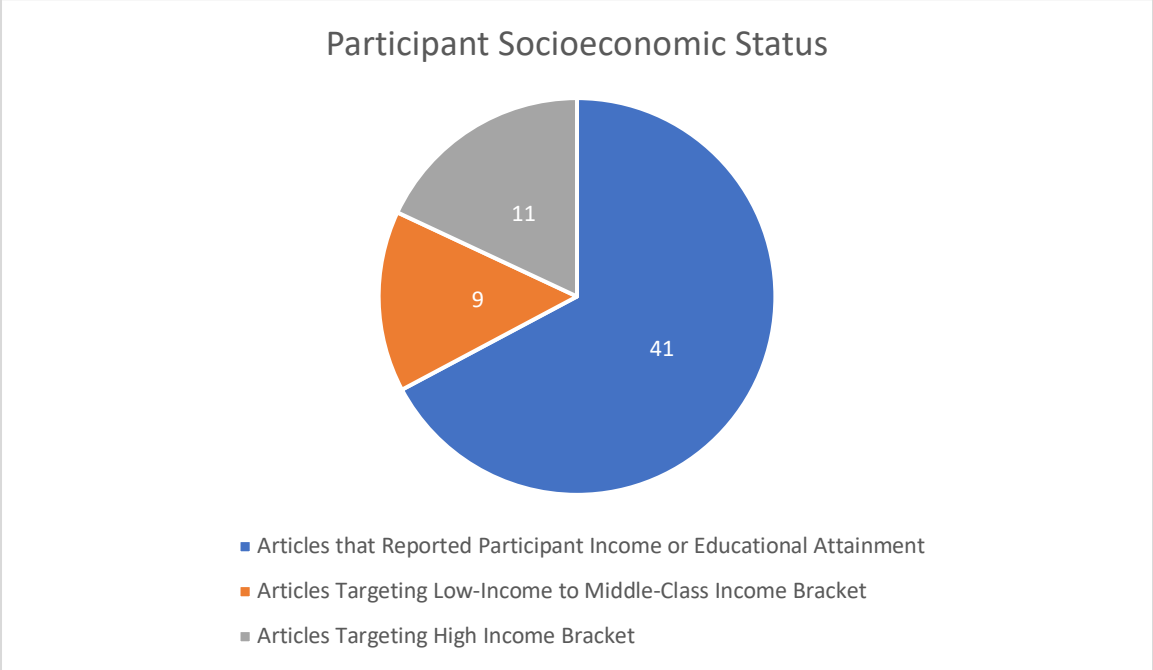
Socioeconomic Status

The significance of income in determining socioeconomic status cannot be overstated, but it is essential to recognize that it is not the sole determinant. In addition to income, various other factors such as financial stability, educational attainment, and an individual's perception of their social standing and class, all play a role in shaping their socioeconomic status (APA, n.d.).

In total, 73 articles (84.9%) provided information on participants' socioeconomic status. However, 25 of these studies (29.0%) failed to offer a clear definition of socioeconomic status. Of the remaining 61 articles that reported data on either participant income or educational attainment, only nine (13.8%) were conducted with individuals from low- to middle-income backgrounds, while 11 (16.9%) were from higher-income brackets (Figure 5).

Figure 5

Socioeconomic Status



In the 46 studies involving BIPOC participants, nine (19.6%) did not provide a clear definition of socioeconomic status. Additionally, 22 of these studies (47.8%) reported data only on participant income or educational attainment. In contrast, among the 12 studies focusing on White or European participants, four (33.3%) failed to define socioeconomic status.

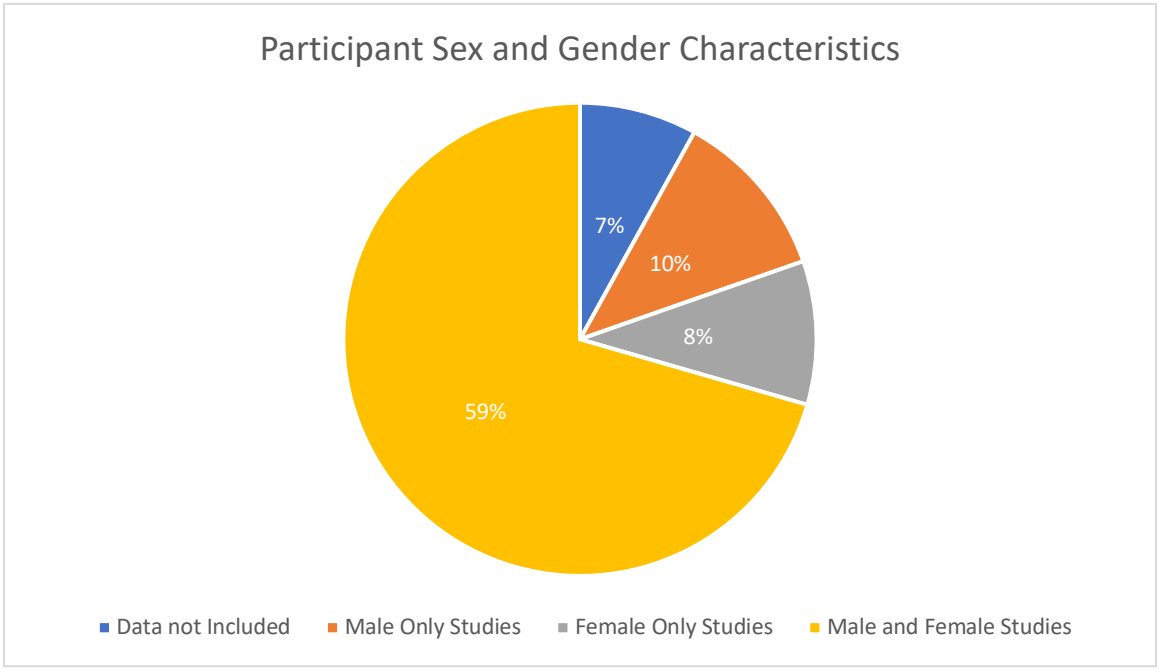
Sex and Gender Characteristics

Addressing the multifaceted nature of gender diversity and accurately categorizing sex within the framework of participants' gender is a crucial aspect of contemporary discourse (APA, n.d.). Unfortunately, the studies examined in this research failed to address these intricacies, leaving ambiguity as to whether participants comprised individuals identifying as cisgender or were assigned their sex at birth. Furthermore, none of the studies indicated the inclusion of participants from across the gender spectrum.

Of the 13 male-only studies, which constituted 9.8% of the overall sample, topics ranged from investigating attachment dynamics between fathers and sons to evaluating the effectiveness of parent-child interaction therapy (PCIT). In contrast, the 11 female-only studies, accounting for 8.3% of the sample, explored attachment relationships between mothers and daughters and assessed the efficacy of PCIT. Remarkably, the majority of the 79 studies, accounting for 59.4% of the total sample, involved participant samples representing both sexes. Additionally, nine studies (6.8%) did not provide information on the gender of their sample. A graphical representation of the sex demographics is illustrated in Figure 6.

Figure 6

Sex and Gender Characteristics



Results by Systematic Review Aims

Intergenerational Transmission of Culture

The primary objective of this systematic review was to investigate the diffusion of cultural values through the parent-child relationship. Specifically, RQ1 addressed how culture is

transmitted via intergenerational transmission in the parent-child relationship. Among the 83 articles assessed for RQ1, a subset of articles delved into the relationship within the context of aging and caregiving for older parents ($N = 9$), and more specifically, between grandparents and grandchildren ($N = 4$).

Most studies ($N = 74$) were grounded in empirical research. Each of the 83 articles was carefully coded for culture, intergenerational transmission, and parenting. These articles encompassed topics related to parenting, including parental involvement, the transmission of behaviors and values across generations, the influence of cultural factors on parenting practices, and the role of socioeconomic factors in family dynamics. Table 2 presents an overview of the general themes that emerged in the literature, the factors and relationship processes that influenced the transmission of culture from one generation to the next through the parent-child relationship: security and trust, impact and role of adverse experiences, and cultural influences on parenting.

Table 2

Intergenerational Transmission of Culture

Category	Number of Studies
Security and Trust	20
Impact of Adverse Experiences	11
Cultural Influences on Parenting Practices	6

Security and Trust. This systematic review thoroughly examined numerous research studies, revealing the multifaceted influence of parenting attitudes on the intergenerational transmission of cultural values within the parent-child relationship. Specifically, the role of parental security and parental trust within the parent-child relationship in facilitating the transmission of cultural values and beliefs across generations was a main theme.

Merz et al. (2009) emphasized the critical role of security and trust in parent-child relationships, highlighting their contribution to fostering positive intergenerational dynamics and cultural continuity. The study also highlighted how trust and security within attachment-based parent-child relationships create an optimal environment for the transmission of cultural values from one generation to the next. By nurturing secure attachment bonds, parents establish an environment characterized by trust, open communication, and emotional closeness, which form the foundation for intergenerational support and the preservation of cultural heritage. Furthermore, Phalet and Schönpflug (2001) investigated patterns of agreement between parents and children in intergenerational relationships, shedding light on the influence of factors such as education and values on trust in cultural transmission. The article emphasized the significance of mutual trust in facilitating the successful transmission of cultural values across generations, stressing their role in maintaining cultural continuity within families.

Impact of Adverse Experiences. A consistent finding in the literature was the impact of ACEs on the intergenerational transmission of culture within the parent-child relationship. Parental exposure to adverse experiences, such as sociopolitical events or premigration trauma, has been linked to the transmission of intergenerational trauma within immigrant families (Chou et al., 2023). ACEs were correlated with the development of externalizing and internalizing problems in children, further straining the parent-child relationship (Rothenberg et al., 2023). Studies by Burke et al. (2021), Coe et al. (2020), and Smith et al. (2015) demonstrated that parental ACEs can lead to the transmission of difficulties to their offspring, disrupting the parent-child relationship and the transmission of values. Moreover, the quality of parent-child interactions was found to exhibit a negative correlation with the severity of ACEs.

Similarly, Zhang et al. (2020, 2022) explored the relationship between maternal ACEs and adverse child health outcomes. Their findings demonstrated that maternal trauma not only affected the well-being of the mother but also influenced their parenting behaviors and the emotional climate within the family. In addition, maternal betrayal trauma was found to predict internalizing and externalizing symptoms in children, thereby underscoring the direct influence of parental trauma on the quality of the mother-child relationship (Babcock Fenerci et al., 2016).

Studies on ACEs and parental behavior revealed the mediating role of parental mental health and coping mechanisms in the intergenerational transmission of values. Ochoa et al. (2022) emphasized the significance of addressing parental trauma and mental health in promoting positive parenting attitudes and cultural continuity. Moreover, Ginn et al.'s (2022) study illuminated the influence of ACEs on parental mental illness, addiction, and social support networks, which affected the emotional environment within the family. Parental depression has been identified as a mediator in the intergenerational transmission of child maltreatment attitudes, indicating the importance of addressing parental mental health in breaking the cycle of adversity (Negriff et al., 2023). Additionally, parenting values and styles, such as authoritarian and permissive approaches, have been shown to influence the transmission of patience and impatience to children (Brenøe & Epper, 2022).

Cultural Influences on Parenting Practices. Cultural context was another dominant theme in the literature regarding its significance in shaping how ACEs are experienced and transmitted across generations. According to Renzaho et al.'s (2017) study on newly arrived migrant families in Australia, parents faced significant challenges in adapting culturally while maintaining traditional values. Parents expressed concerns about their children disconnecting from traditional values and implemented strict rules to reinforce cultural identity. However, poor

communication between parents and children led to compromised family cohesion and increased stress, illustrating the tension between cultural preservation and adaptation.

Studies (e.g., Gniewosz & Noack, 2012; Zhang et al., 2022) also highlighted the cultural variability in the intergenerational transmission of values and behaviors. For instance, the study on intergenerational transmission of dual identity within Turkish immigrant families emphasized the differential impact of maternal and paternal influences on cultural identity (Gniewosz & Noack, 2012). Similarly, research on academic values among Chinese families revealed differential patterns of parental influence on children's values, with some children being more influenced by maternal values and others by paternal values (Zhang et al., 2022).

Furthermore, cultural context significantly influences the transmission of parenting attitudes and values. Studies conducted across different cultural contexts, such as Germany and China (Schönpflug & Yan, 2013), elucidated the variability in parental roles and transmission patterns based on cultural norms and values. Schönpflug and Yan uncovered significant disparities in cultural values between these regions, with Germany exhibiting a propensity towards individualism and China leaning towards collectivism. Notably, their research illuminated how these cultural dynamics influenced the transmission of values within the parent-child relationship, with maternal influence more pronounced in Germany while paternal influence more prominent in China.

A study on migrant families in Australia (Renzaho et al., 2017) elucidated the challenges faced by parents in navigating intergenerational acculturation gaps. In the study, parents expressed concerns about their children detaching from their cultural heritage, illustrating the inherent tension between preserving cultural identity and assimilating into the dominant societal norms of the host country. The discrepancies in the pace of acculturation between parents and

children exacerbated conflicts and disparities in parental expectations, resulting in the implementation of strict rules to maintain cultural continuity, often at the expense of strained family cohesion due to communication breakdowns and generational differences. Similarly, Kaferly et al. (2020) provided insight into the particular difficulties faced by migrant families in maintaining traditional values while navigating cultural integration. Within these communities, the process of acculturation via lack of parental attunement warmth could lead to intergenerational conflicts, as children tried to balance their parents' cultural expectations with the impact of the broader society and their own autonomy.

Attachment-Based Parenting Styles on Intergenerational Transmission

The second aim of this systematic review was to investigate how attachment-based parenting styles (e.g., authoritarian, authoritative, permissive, and uninvolved) affect the intergenerational transmission of culture, values, and beliefs. A total of 14 articles addressed research question two, focusing primarily on parent-child dynamics, with three studies examining grandparent-grandchild relationships. Quantitative methodologies were employed across all 14 sampled articles. The literature review revealed several key themes regarding attachment-based parenting styles and their influence on cultural transmission within families (Table 3): relationship quality and well-being, open communication, and emotional bonding.

Table 3

Attachment-Based Parenting Styles on Intergenerational Transmission

Category	Number of Studies
Relationship Quality and Well-Being	6
Open Communication	4
Role of Emotional Bonding	4

Relationship Quality and Well-Being. Merz et al.'s (2009) findings highlighted the importance of strong, supportive relationships in fostering emotional resilience and overall

satisfaction within the family unit. Parents practicing authoritative parenting practices ranked their relationship quality higher than parents adopting other attachment-based parenting styles (i.e., authoritarian, permissive, or uninvolved). Research also suggested that when children perceived their parents as trustworthy and reliable, they were more likely to adopt and adhere to parental values and beliefs (Schofield et al., 2014). Parents who actively participated in their children's upbringing and demonstrated parental consistency were more likely to transmit positive cultural values (Brenøe & Epper, 2022). Torabian et al. (2022) further highlighted the importance of strong intergenerational relationships within families, with the strength of the relational bond between aging parents and grandchildren having a positive impact on well-being.

Conversely, negative relationship dynamics, characterized by hostility, conflict, and emotional distance, were found to impede the transmission of values, leading to discrepancies between parental and child perceptions (Phalet & Schönpflug, 2001). High levels of control and low levels of warmth, often characterized as authoritative parenting practices, were found to be strongly correlated to strained parent-child relationships and increased conflict and resentment. Parental mistrust and inconsistency were correlated with lack of respect for cultural traditions and values among children, contributing to intergenerational cultural dissonance (Kane et al., 2019).

Open Communication. One of the central findings from the literature on the intergenerational transmission of culture, values, and beliefs through attachment-based parenting practices was the open communication between parents and their children. Chao's (1994) study on Chinese American families found that authoritative parenting practices, characterized by high levels of parental warmth and responsiveness, were associated with greater parent-child agreement on values related to filial piety, academic success, and cultural identity. Steinberg et

al.'s (1994) findings revealed that adolescents raised by authoritative parents demonstrated higher levels of moral reasoning and value internalization, as they were encouraged to weigh the consequences of their actions and consider the perspectives of others. Authoritative parenting encouraged negotiation and discussion of cultural values, fostering exploration and comprehension of heritage (Bigfoot & Funderbunk, 2011; Bridges et al., 2007).

However, the literature also revealed that insufficient communication between parents and children, especially in migrant families, could impede the transmission of cultural values and give rise to conflicts related to cultural identity. The significance of open communication within migrant families was highlighted by Renzaho et al. (2017). Despite parents' efforts to uphold traditional values, children who had strict parents faced challenges in reconciling their parents' expectations with their yearning for autonomy and assimilation into the broader community. Likewise, authoritarian parenting tended to rigidly enforce traditional cultural practices, potentially restricting children's exposure to alternative perspectives (Torabian et al., 2022; J. Yang & Zheng, 2019). Permissive parenting blurred boundaries, leading to confusion or conflict, and uninvolved parenting resulted in distant relationships that may compromise a child's cultural identity (Raffagnato et al., 2021).

Role of Emotional Bonding. Emotional bonding emerges as a central theme in the selected articles, particularly concerning its significance within attachment-based parenting and its implications for intergenerational transmission of culture. Merz et al. (2009) underscored the pivotal role of emotional attachment in facilitating the transmission of cultural values and beliefs, emphasizing the primal nature of deep emotions and affections in fostering a sense of belonging within the family unit for values transmission. According to J. Yang and Zheng (2019), emotional bonding acts as a mediator in shaping perceptions of successes and challenges among

family members since children are more likely to identify with a parent's ideology if they have a strong feeling of attachment. Furthermore, M. Yang et al. (2013) delved into the consequences of emotional bonding on family conflicts and alienation, stressing its pivotal role in shaping intergenerational dynamics. They suggested that strong emotional bonds serve to mitigate conflicts and enhance mutual understanding, thereby facilitating the transmission of cultural values from one generation to the next.

Attachment-Based Parenting Effects on a Child's Neurology

The third objective was to investigate the influence of attachment-based parenting on children's neurological development. Specifically, RQ3 addressed how attachment-based parenting affects the neurology of a child. Among the 33 articles reviewed, the primary emphasis was placed on the parent-child relationship, with 30 articles (91.9%) specifically addressing this topic. All 33 studies relied on a quantitative methodology to examine the association between attachment-based parenting and children's neurological development. These studies were evaluated through coding to assess content related to parenting, attachment, and neuroscience, which allowed for a comprehensive understanding of the topic.

The results of RQ3 revealed several key themes that elucidate the impact of attachment-based parenting on children's neurological development. These themes encompassed numerous aspects of parenting behavior, family dynamics, socioeconomic factors, and genetic influences. Table 4 provides an overview of the general themes identified in the literature.

Table 4

Attachment-Based Parenting Effects on a Child's Neurology

Category	Number of Studies
Enhanced Brain Development	1
Positive Neurological Outcomes	3
Adversity Buffer	3
Long-Term Effects on Brain Functioning	2

Enhanced Brain Development. Attachment-based parenting has been demonstrated to profoundly impact optimal brain development in children. Through consistent emotional support, warmth, and responsiveness to a child's needs, attachment-based parenting fosters the growth of brain regions critical for emotional regulation and social processing (Tian et al., 2020). Tian et al. found that attachment-based parenting correlated with greater volumes in key areas such as the hippocampus and parahippocampal gyrus, essential for managing emotions and processing social cues effectively. Furthermore, the frontal-temporal networks associated with executive function and social processing also exhibited increased volumes, suggesting that attachment-based parenting supports the development of higher-order cognitive abilities and social skills necessary for navigating complex social environments. Moreover, the study suggests that attachment-based parenting promotes neuroplasticity, enabling the brain to adapt and reorganize in response to positive caregiving experiences.

Positive Neurological Outcomes. Children raised in environments characterized by attachment-based parenting exhibit positive neurological outcomes, reflecting the neurobiological benefits of secure attachment relationships (McKenzie et al., 2024; Merz et al., 2009; Takeuchi et al., 2015). McKenzie et al. (2024) observed heightened parental activation and initial attention to infant cues, indicating a robust response to their own offspring. These findings align with evolutionary models, emphasizing the allocation of resources towards offspring survival and well-being. Similarly, Merz et al. (2009) discovered that the process of bond formation triggers brain reactivity to parenting-related cues, suggesting attachment's influence on brain processing of infant signals.

Event-related potential responses revealed heightened activation and initial attention to infant cues among parents and partners compared to romantically unattached individuals.

Takeuchi et al. (2015) found that parental interactions, particularly positive verbal communication, positively impacted verbal cognition and associated neural development in children. Parent-child interactions influenced brain structures involved in nonliteral information processing during communication, such as the right superior temporal gyrus. Moreover, the neural adaptations indicated that attachment-based parenting fosters neuroplasticity, enabling the brain to adapt and reorganize in response to positive caregiving experiences.

Adversity Buffer. In terms of buffering against adversity, several studies have examined attachment-based parenting as a crucial protective factor against the negative impact of adverse experiences, such as poverty or traumatic brain injury (TBI), on brain structure and function. Brody et al. (2019) revealed that supportive parenting serves as a shield against the detrimental effects of poverty during adolescence on resting-state functional brain connectivity in extensive neural networks during adulthood. Children who receive supportive parenting exhibit enhanced coherence in critical neural networks despite growing up in impoverished conditions. This highlights the pivotal role of parental support in ameliorating the adverse effects of socioeconomic adversity on brain development and functioning. Similarly, Chadwick et al. (2024) found that higher preinjury and acute parental psychological distress increase the likelihood of children experiencing severe and persistent postconcussive symptoms (PCS) following pediatric mild TBI (mTBI).

However, parental and family functioning was found to mitigate the negative impacts of mTBI on PCS. Wade et al. (2011) discovered that responsive and positive parenting behaviors act as a buffer against the adverse effects of TBI on child behavior. Children with severe TBI who receive positive parenting exhibit lower levels of new behavior problems compared to those exposed to parental negativity and criticism.

Long-Term Effects on Brain Functioning. Concerning the enduring effects on brain functioning, the longevity of attachment figures, such as parental longevity, correlates with preserved brain structure, indicating that the quality of early attachment relationships profoundly impacts neural health across the lifespan. Tian et al. (2020) delved into this relationship by examining the correlation between parental longevity and regional brain structure using advanced neuroimaging techniques such as MRI volumetric measures and white matter microstructural measures. Participants with at least one parent surviving to age 85 exhibited greater volumes in specific brain regions, including the hippocampus, parahippocampal gyrus, middle temporal lobe, and primary sensorimotor cortex.

Moreover, Hayden et al. (2010) investigated how variations in interparental relationship functioning predict the quality of parent-child interactions in daily life, particularly among families with children with autism spectrum disorder (ASD) and families with neurotypical children. The study proposed that fluctuations in parental relationships can significantly impact parent-child interactions, especially within challenging relationships. Positive fluctuations in the parental relationship, even amidst challenges, yielded beneficial effects on parent-child interactions.

Chapter 4: Discussion

The objective of this systematic review was to examine the ways in which cultural transmission is facilitated through the parent-child relationship across generations; attachment-based parenting influences the intergenerational transmission of cultural values, beliefs, and customs; and the impact of attachment-based parenting on the neurological development of a child. This chapter discusses the implications of the findings and recommendations for next steps.

Discussion of Findings

Intergenerational Transmission of Culture

The intergenerational transmission of values and culture is complex and multifaceted. Though there was interested in exploring *how* culture is transmitted, this review uncovered the essential factors and qualities in relationships that support transmission of culture. Specifically, findings suggested that the transmission of cultural values in the parent-child relationship is greatly influenced by the qualities of the parents, such as parental trust, security, and emotional stability. When parents provide a sense of security and trust, it creates an environment that encourages the transmission of cultural heritage, as it promotes open communication and mutual understanding between parents and children (Chou et al., 2023; Juang & Meschke, 2015; Liu et al., 2021; Merz et al., 2009; Rothenberg et al., 2023; Sun et al., 2023; Wu & Chao, 2011; M. Yang et al., 2021; J. Yang & Zheng, 2019; Yi et al., 2004). Moreover, parental trust and security establish a bond of reliability and confidence that is necessary for the transmission of cultural values (Anquilino, 1999). Thus, parental trust and safety provide the containment needed to establish a healthy parent-child dynamic, creating an atmosphere of stability, open

communication, and mutual attunement that facilitates the preservation of cultural traditions across generations.

On the other hand, the presence of ACEs can have a negative impact on the transmission of cultural values, as they can affect the emotional availability and attachment dynamics of parents, making it difficult for them to convey cultural values to their children (Burke et al., 2021; Chou et al., 2023; Coe et al., 2020; Daud et al., 2005; Ginn et al., 2022; Lê-Scherban et al., 2018; Ochoa et al., 2022; Zhang et al., 2020, 2022). The psychological effects of ACEs can also perpetuate cycles of trauma within families, impeding the formation of strong relationships among parents and children, thereby possibly hindering the transmission of cultural values (Burke et al., 2021; Rothenberg et al., 2023). For example, a parent who experienced childhood abuse may unintentionally replicate patterns of neglect or harsh discipline, perpetuating a cycle of trauma within the family. As such, the emotional stability of a parent profoundly shapes a child's worldview, coping mechanisms, and interpersonal relationships.

Cultural influences play a significant role in shaping parenting practices, with variations in the importance of autonomy, discipline strategies, and communication patterns on cultural values (Gniewosz & Noack, 2012; Zhang et al., 2022). Disparities in parenting styles can impact how values are communicated, reinforced, or negotiated within the parent-child relationship (Schofield et al., 2014; Yi et al., 2004; Zhu et al., 2022), which will be addressed in the following section.

Moreover, an interesting finding from the literature revealed the power of storytelling as a vehicle in which culture can be transmitted across generations. M. Yang et al. (2013) elucidated the influence of storytelling as a means for parents to impart cultural values, traditions, and moral lessons to their children, thereby contributing to the transmission of cultural

heritage across generations. Similarly, Renzaho et al.'s (2017) findings suggest that storytelling is a tool migrant parents use to pass down cultural narratives, traditions, and values to their children, helping them maintain a connection to their cultural heritage in the face of acculturation pressure. Notably, Schönpflug and Yan (2013) suggested that storytelling can be used by parents in collectivist cultures to emphasize communal values, interdependence, and the significance of family and community bonds. Conversely, storytelling in individualistic cultures may emphasize personal achievements, autonomy, and self-expression.

Furthermore, while the RQ1 focused on the context of intergenerational transmission in the parent-child relationship, several articles discussed the influence of grandparent relationships. Specifically, Peters (2005) examined the intergenerational transmission of cultural values in Hispanic families, suggesting that grandparents play a significant role in transmitting cultural beliefs, values, and norms to both parents and adolescents. Rothenberg et al. (2023) suggested that cultural norms, including those related to grandparent involvement in child-rearing, shaped the parent-child relationship and influenced parenting practices. For example, in cultures in which grandparent involvement was normative, grandparents played a significant role in transmitting cultural values and practices to both parents and children, thereby influencing how culture is transmitted across generations. Thus, grandparents can serve as cultural transmitters, passing down traditional values and practices to their children and grandchildren, thereby shaping the parent-child relationship and influencing how culture is transmitted across generations.

In summary, the transmission of cultural values within the parent-child relationship is a complex process influenced by several factors. Additionally, grandparents play a noteworthy role in cultural transmission, serving as cultural transmitters who pass down traditions to both parents

and children, thereby affecting intergenerational relationships and the continuity of cultural heritage. Recognizing these dynamics sheds light on the multifaceted process by which culture is transmitted from one generation to the next within familial contexts.

Attachment-Based Parenting Styles on Intergenerational Transmission

The findings revealed the profound impact of parental trust, security, and emotional stability on a child's identity formation (Gniewosz & Noack, 2012; Schofield et al., 2014; Yi et al., 2004; Zhang et al., 2022; Zhu et al., 2022). Within the framework of attachment-based parenting, these specific parental attributes are considered crucial for fostering an environment conducive to the preservation and transmission of cultural heritage while promoting open communication and mutual understanding (Bigfoot & Funderburk, 2011; Bridges et al., 2007; Friedson, 2016; Raffagnato et al., 2021). However, discrepancies in parenting approaches can significantly influence how these parental qualities are communicated, reinforced, or negotiated within the parent-child relationship.

The literature indicated that authoritative parenting practices, characterized by parental warmth combined with firm boundaries, facilitated the transmission of cultural values (Choi et al., 2008; Torabian et al., 2022; Yee Neoh et al., 2013). On the other hand, strained relationships hinder the transmission of cultural values, potentially resulting in cultural dissonance. Such relationships often mirror the characteristics of authoritarian, permissive, or uninvolved parenting styles, which lack warmth, strict rules, or disengagement, creating barriers to effective communication and trust (Bigfoot & Funderburk, 2011; Bridges et al., 2007; Friedson, 2016; Raffagnato et al., 2021). In particular, authoritarian parenting appeared to exacerbate cultural conflicts in immigrant families where traditional values often clash with Western norms (Rosenthal et al., 1996; M. Yang et al., 2013). Thus, the transmission of values may be impeded

or facilitated by attachment-based practices (i.e., authoritarian, authoritative, permissive, or uninvolved), as children may reject or adopt the values espoused in the parent-child dyad.

Relationship quality, open communication, and emotional bonding are pivotal factors influencing children's decisions to accept or reject their parents' beliefs. These elements, inherently present within authoritative parenting styles, create an environment conducive to the exchange and perpetuation of cultural values (Ainsworth et al., 1978). Firstly, the quality of the parent-child relationship sets the tone for the transmission process. Children are more likely to adopt the beliefs and principles upheld by their parents if they perceive the parent-child relationship to be strong (Merz et al., 2009). Within authoritative parenting, characterized by warmth and responsiveness, the parent-child bond is strong and supportive (Ainsworth et al., 1978; Main & Solomon, 1990). This positive relationship foundation fosters trust and mutual understanding, creating an environment in which children feel secure in exploring and embracing their cultural identity. Secondly, open communication channels enable parents and children to engage in meaningful dialogue about cultural values and beliefs. Parents who practice authoritative parenting encourage their children to express their thoughts and opinions freely, fostering a sense of agency and empowerment (Thompson, 2014). This open exchange of ideas allows children to actively participate in the cultural transmission process, gaining a deeper understanding of their heritage and values. In contrast, a lack of communication or ineffective communication strategies, often described in authoritarian, uninvolved, or permissive parenting, may impede the transmission process, leading to misunderstandings, conflicts, or disengagement from cultural traditions (Choi et al., 2008; Torabian et al., 2022; Yee Neoh et al., 2013). Lastly, strong emotional bonding enhances the transmission of cultural values by fostering a sense of belonging and connection within the family unit (Raffagnato et al., 2021). Authoritative parents

prioritize emotional attunement and empathy, cultivating deep emotional bonds with their children (Thompson, 2014). These emotional connections create a sense of shared identity and heritage, making children more receptive to internalizing and perpetuating cultural values and traditions. In contrast, a lack of emotional bonding, often observed in authoritarian or uninvolved parenting, may lead to feelings of detachment or alienation, hindering the transmission process (Ainsworth et al., 1978; Main & Solomon, 1990).

In summary, relationship quality, open communication, and emotional bonding are essential components of attachment-based parenting practices that shape the intergenerational transmission of values within families. By fostering positive relationships, promoting effective communication, and nurturing emotional connections, parents can create an environment that supports the preservation and transmission of cultural heritage across generations. Understanding the mechanisms through which these factors influence value transmission is crucial for promoting cultural continuity, fostering family cohesion, and enhancing the well-being of future generations.

Attachment-Based Parenting Effects on a Child's Neurology

The significance of attachment-based parenting in the neurological development and growth of a child has been firmly established by the results. Studies have emphasized the intricate interplay between parenting behaviors, neural mechanisms, and child outcomes. By focusing on various elements of attachment-based parenting, such as maternal responsiveness, emotional regulation, and parental nurturance, researchers uncovered the neurobiological underpinnings of this crucial parent-child relationship.

Maternal responsiveness, characterized by sensitivity and attunement to a child's cues, has been linked consistently to positive neurodevelopmental outcomes. Studies indicate that

parents exhibit greater activation and attention to infant cues than nonparents, suggesting that parental responsiveness is associated with enhanced neural processing of child-related information. This heightened response to one's own offspring, evidenced by increased activation in brain regions involved in social cognition (i.e., amygdala-temporal pole functional connectivity), underscores the importance of maternal responsiveness in shaping neural responses to infant signals (Schofield et al., 2014; Szabó & Miklósi, 2022).

Effective emotional regulation within the parent-child dyad influences brain connectivity patterns associated with socioemotional processing. Supportive parenting behaviors, such as warmth and empathy, were shown to impact resting-state functional brain connectivity in children, particularly in regions implicated in emotional and regulatory processing (Brody et al., 2019; Wade et al., 2011). Additionally, parental warmth was associated with increased functional connectivity between the brain regions involved in reflective self-awareness and decision making (Schofield et al., 2014). These findings suggest that the quality of parent-child interactions plays a critical role in shaping the neural circuits underlying emotional regulation and socioemotional processing.

Parental nurturance acted as a protective factor against adverse neurodevelopmental outcomes, particularly in the context of childhood TBI. High levels of parental nurturance were shown to mitigate the negative effects of TBI on peer relationships by moderating deficits in theory of mind, a critical component of social cognition (Deighton et al., 2019). Moreover, parental warmth and support have been linked to improved cognitive functioning and executive control in children with severe TBI, highlighting the role of positive parenting behaviors in promoting adaptive neural development (Wade et al., 2011).

Attachment-based parenting has a profound impact on children's neurobiology. It affects neural processing, emotional regulation, and cognitive functioning. By examining the neurological processes that underlie parent-child interactions, this field of research offers invaluable insights into the relationship between parenting behaviors and child neural development. It is crucial to understand these mechanisms to create effective interventions aimed at promoting positive parent-child relationships and fostering optimal neurodevelopmental outcomes in children.

Clinical Implications

This systematic review highlights how attachment-based interventions can be beneficial tools to address mood and neurodevelopmental disorders in children, particularly in the context of intergenerational transmission of ACEs and acculturation challenges in migrant families. The transmission of ACEs across generations and its impact on adolescent behavior, especially within Hispanic families, has been discussed (Burke et al., 2021; Coe et al., 2020; Daud et al., 2005; Ginn et al., 2022; Lê-Scherban et al., 2018; Ochoa et al., 2022). Family-focused interventions that aim to enhance communication skills and support parents who have experienced ACEs could help mitigate the likelihood of adolescents displaying externalizing behaviors in Hispanic families. One more specific intervention is Video Interaction Guidance (VIG), a strengths-based approach that employs video feedback to promote sensitive and attuned interactions between parents and children (Landor et al., 2011). Overall, attachment based interventions are beneficial for children with mood and neurodevelopmental disorders.

Studies on intergenerational acculturation gaps among new migrant communities underscore the need for culturally responsive interventions to support families in navigating cultural transitions (Dellmann-Jenkins et al., 2009; Dennis et al., 2009; Ochoa et al., 2022;

Schönpflug & Yan, 2013; Velázquez, 2009). Parents in these communities often struggle to maintain their traditional cultural values while helping their children adapt to the new culture. Interventions should aim to bridge the gap between parents and children by fostering open communication, providing resources for navigating cultural conflicts, and promoting cultural pride and identity. An attachment-based intervention that could be beneficial is Attachment and Biobehavioral Catch-Up (ABC), which is designed to enhance parental sensitivity and responsiveness in caregivers of young children who have experienced adversity (Dozier et al., 2008).

Interventions that promote attachment-based parenting have demonstrated potential in influencing stress-related neural circuits and fostering adaptive neurobiological changes in children. For example, the Mom Power attachment-based intervention, which comprises 13 sessions of parenting and self-care skills, has been associated with increased functional connectivity in brain regions related to reflective self-awareness and decision-making in children (Swain et al., 2017). Attachment-based interventions also play a crucial role in addressing neurodevelopmental disorders in children by strengthening the parent-child relationship, enhancing emotional regulation, and promoting secure attachment. Attachment-based interventions are particularly beneficial for children with conditions such as autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), and developmental delays. For example, the Circle of Security Intervention helps parents understand and respond effectively to their child's cues, which is invaluable for children with neurodevelopmental disorders who may struggle with communication and social interaction (Hoffman et al., 2006). Another evidence-based attachment-based intervention is Parent-Child Interaction Therapy, which targets disruptive behavior disorders in children, including ADHD (Eyberg et al., 2008).

Incorporating these evidence-based approaches into clinical practice empowers clinicians to deliver holistic and personalized care that directly addresses the intricate needs of families navigating complex challenges. By integrating attachment-based interventions and culturally responsive strategies into their therapeutic arsenal, clinicians can cultivate an environment where families feel understood, supported, and empowered to confront and overcome adversities. Through targeted interventions that strengthen parent-child relationships, enhance emotional regulation, and promote cultural pride and identity, clinicians play a pivotal role in fostering resilience within families, equipping them with the tools and skills needed to navigate the often tumultuous landscape of mood and neurodevelopmental disorders. This comprehensive approach not only targets symptom management but also promotes long-term adaptive functioning and psychological well-being, laying a foundation for sustained growth and positive outcomes across the lifespan.

By incorporating attachment-based interventions and culturally responsive methods into their therapeutic repertoire, clinicians can create an environment where families feel understood, supported, and empowered to confront and overcome adversities. Such recommendations may also be incorporated into neuropsychology practice. Neuropsychologists play a pivotal part in cultivating resilience within families by recommending tailored interventions that fortify parent-child relationships, enhance emotional regulation, and promote cultural pride and identity. As such, it is vital that clinicians across the diverse fields of psychology understand the vital importance of attachment-based interventions in addressing mood and neurodevelopmental disorders in children, particularly in the context of intergenerational transmission of ACEs and acculturation challenges in migrant families.

In conclusion, attachment-based interventions demonstrate tremendous potential for addressing mood and neurodevelopmental disorders in children, particularly in the face of intergenerational transmission of ACEs and the challenges posed by acculturation in migrant families. By implementing culturally sensitive strategies, these interventions can effectively cater to the diverse requirements of families from a wide range of cultural backgrounds. Clinicians and practitioners can utilize these evidence-based approaches to offer comprehensive care and improve overall well-being. Attachment-based interventions tackle the root causes of neurodevelopmental disorders and foster positive parent-child interactions, thereby playing a pivotal role in cultivating resilience and enabling families to overcome adversities effectively.

Limitations and Future Directions

There are certain limitations that must be considered when reviewing the findings in this systematic review, including the scope of the literature, the methods used in the studies, and potential biases that may have existed in the research process.

First, the reviewed literature may not have fully captured a wide range of cultural contexts and experiences. Most studies that met the inclusion and exclusion criteria were conducted in western countries, which restricts the applicability of the findings to more culturally diverse populations. Therefore, further research is essential to explore how attachment-based parenting interacts with cultural factors in various contexts.

Second, the methodologies used in the studies were diverse and incorporated both qualitative and quantitative approaches. Although the diversity of methodologies added richness to the review, it also presented challenges in synthesizing the findings and drawing clear conclusions. The heterogeneity of research methods may have hampered the ability to establish

consistent patterns or relationships across studies, which could restrict the strength of the conclusions drawn from this review.

Finally, the limitations of the individual studies included in the review, such as sample size, methodological rigor, and potential confounding variables, may have also affected the overall quality and reliability of the evidence synthesized. Studies with small sample sizes or methodological weaknesses may have introduced biases or limitations that affected the validity of the conclusions drawn from the review.

Considering these limitations, caution should be exercised when extrapolating the findings of this dissertation to broader populations and contexts. Future research should address these limitations by employing more diverse methodologies, expanding the cultural scope of studies, and considering the implications of publication bias and temporal constraints. By addressing these limitations, future studies can contribute to a more comprehensive understanding of attachment-based parenting and its role in cultural transmissions across diverse populations.

Conclusion

This systematic review sheds light on the intricate relationship between attachment-based parenting, child neurology, and the intergenerational transmission of cultural values. The results of the extensive analysis of the existing literature have elucidated the profound effects of parenting behaviors on the neurological development and cultural socialization processes of children. This review highlights the importance of parental responsiveness, emotional regulation, and nurturance in shaping neural circuits underlying socioemotional processing and cognitive functioning in children.

Moreover, the findings have emphasized the role of attachment-based parenting styles, including authoritative, authoritarian, permissive, and uninvolved, in influencing the transmission of cultural values and beliefs across generations. Positive parent-child relationships have been identified as critical mediators in this process, facilitating the exchange of cultural knowledge and contributing to a sense of cultural belonging. In contrast, strained relationships have been associated with cultural dissonance and compromised cultural identities.

Furthermore, this systematic review has identified key clinical implications and intervention strategies aimed at promoting positive parent-child relationships and fostering cultural continuity within diverse family contexts. Addressing parental depressive symptoms, enhancing parent-adolescent communication, and implementing culturally sensitive interventions are essential steps in supporting families as they navigate cultural transitions and acculturation challenges.

Although there are certain limitations, such as the concentration of research on western societies and the heterogeneity of research methodologies, this review provides insightful information on the multifaceted connection between attachment-based parenting, child brain development, and the propagation of culture. It is crucial to address these limitations and expand the cultural scope of studies to further enrich understanding of these dynamics. By acknowledging the significance of attachment-based parenting for both neurological development and cultural transmission, clinicians and policymakers can formulate efficient interventions and policies to support families and promote holistic well-being across a wide range of populations.

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APPENDIX A

Search Terms

1. “intergenerational or transgenerational or historical or multigenerational or parent-child attachment or parent-child interaction or parent-child cohesion or grandparent child relationship or grandparent-child attachment or grandparent-child interaction or grandparent-child cohesion” AND “parenting or parent or parental or parenting styles or parenting practices or child rearing or child development” AND “attachment or bonding or connection or relationship or attachment style or attachment theory or bond”
2. “culture or cultural or identity or values or beliefs or perceptions or views or attitudes or opinions or viewpoints or perspectives or perceptions or experiences or reflections or attitudes or morals or priorities” AND “intergenerational or transgenerational or historical or multigenerational or parent-child attachment or parent-child interaction or parent-child cohesion or grandparent child relationship or grandparent-child attachment or grandparent-child interaction or grandparent-child cohesion” AND “parenting or parent or parental or parenting styles or parenting practices or child rearing or child development” AND “attachment or bonding or connection or relationship or attachment style or attachment theory or bond”
3. “culture or cultural or identity or values or beliefs or perceptions or views or attitudes or opinions or viewpoints or perspectives or perceptions or experiences or reflections or attitudes or morals or priorities” AND “intergenerational or transgenerational or historical or multigenerational or parent-child attachment or parent-child interaction or parent-child cohesion or grandparent child relationship or grandparent-child attachment or grandparent-child interaction or grandparent-child cohesion” AND “parenting or parent or parental or parenting styles or parenting practices or child rearing or child development” AND “attachment or bonding

or connection or relationship or attachment style or attachment theory or bond" AND "neuroscience or neurobiology or neurophysiology or brain or neuropsychology or neurology"

4. "culture or cultural or identity or values or beliefs or perceptions or views or attitudes or opinions or viewpoints or perspectives or perceptions or experiences or reflections or attitudes or morals or priorities" AND "intergenerational or transgenerational or historical or multigenerational or parent-child attachment or parent-child interaction or parent-child cohesion or grandparent child relationship or grandparent-child attachment or grandparent-child interaction or grandparent-child cohesion" AND "parenting or parent or parental or parenting styles or parenting practices or child rearing or child development"

5. "intergenerational or transgenerational or historical or multigenerational or parent-child attachment or parent-child interaction or parent-child cohesion or grandparent child relationship or grandparent-child attachment or grandparent-child interaction or grandparent-child cohesion" AND "parenting or parent or parental or parenting styles or parenting practices or child rearing or child development"

6. "parenting or parent or parental or parenting styles or parenting practices or child rearing or child development" AND "attachment or bonding or connection or relationship or attachment style or attachment theory or bond" AND "neuroscience or neurobiology or neurophysiology or brain or neuropsychology or neurology"

7. "parenting or parent or parental or parenting styles or parenting practices or child rearing or child development" AND "neuroscience or neurobiology or neurophysiology or brain or neuropsychology or neurology"

APPENDIX B

Search Process

Table 5

Database Searches

Search Date	DATABASE/SOURCE	SEARCH SYNTAX OR OTHER GUIDELINES FOR THE SEARCH	# of Records
01.29.23	EBSCOHost (includes PsycInfo and PsycArticles)	type in search term 02, OR (synonyms) AND 03, OR (synonyms) AND 04, OR	658
01.29.23	PubMed	type in search term 02, OR (synonyms) AND 03, OR (synonyms) AND 04, OR	79
01.29.23	EBSCOHost (includes PsycInfo and PsycArticles)	type in search term 01, OR (synonyms) AND 02, OR (synonyms) AND 03, OR (synonyms) AND 04, OR (synonyms)	29
01.29.23	PubMed	type in search term 01, OR (synonyms) AND 02, OR	7
01.29.23	EBSCOHost (includes PsycInfo and PsycArticles)	type in search term 01, OR (synonyms) AND 02, OR (synonyms) AND 03, OR (synonyms) AND 04, OR (synonyms) AND 05, OR (synonyms)	80
01.29.23	PubMed	type in search term 01, OR (synonyms) AND 02, OR	7
01.29.23	EBSCOHost (includes PsycInfo and PsycArticles)	type in search term 01, OR (synonyms) AND 02, OR (synonyms) AND 03, OR	27
01.29.23	PubMed	type in search term 01, OR (synonyms) AND 02, OR (synonyms) AND 03, OR	13
01.30.23	EBSCOHost (includes PsycInfo and PsycArticles)	type in search term 01, OR (synonyms) AND 02, OR	663
01.30.23	PsycInfo and PsycArticles	type in search term 02, OR	96
01.30.23	PubMed	type in search term 02, OR	533
03.18.23	EBSCOHost (includes PsycInfo and PsycArticles)	type in search term 03, OR (synonyms) AND 04, OR	40
03.18.23	PubMed	type in search term 03, OR (synonyms) AND 04, OR	13
03.18.23	PsycInfo and PsycArticles	type in search term 03, OR	482
03.18.23	PubMed	type in search term 03, OR	427

APPENDIX C

Screening Process

DUPLICATE REMOVAL

AUTHOR(S)	YEAR	ABBREVIATED TITLE	DATABASES/ SOURCES
O'Brien, Katy H.; Schelling	2019	A comparison of student and parent knowledge and perceived confidence about brain injury and concussion	EBSCOHost
Singer, George H. S.; Glang	1994	A comparison of two psychosocial interventions for parents of children with acquired brain injury: An exploratory stu	EBSCOHost
Boddé, Tamar Roos Anner	2015	A critical examination of mild traumatic brain injury management information distributed to parents	EBSCOHost
Nie, Zhaowen; Xie, Xinhui;	2023	A Cross-Sectional Study: Structural and Related Functional Connectivity Changes in the Brain: Stigmata of Adverse Par	EBSCOHost
Patrick, Pamela M.; Reupe	2019	A cross-sectional study on intergenerational parenting and attachment patterns in adult children of parents with men	EBSCOHost
Behan, Michael; Nawshin,	2020	A crossed-disciplinary evaluation of parental perceptions surrounding pediatric non-invasive brain stimulation researc	EBSCOHost
Chen, F., & Fleer, M.	2016	A cultural-historical reading of how play is used in families as a tool for supporting children's emotional development	EBSCOHost
Fleer, M., Hammer, M., &	2014	A Cultural-Historical Reading of the Emotional Development of Young Children.	EBSCOHost
Fragkiadaki, G., Fleer, M.,	2019	A Cultural-Historical Study of the Development of Children's Scientific Thinking about Clouds in Everyday Life.	EBSCOHost
Fleer, M.	2014	A Cultural-Historical View of Child Development: Key Concepts for Going Beyond a Universal View of the Child.	EbSCOHost

FIRST SCREENING

YEAR	ABBREVIATED TITLE	DATABASES/ SOURCES	TITLE AND/OR KEYWORD SCREEN: DECISION - DATE	ABSTRACT SCREEN: DECISION - DATE
2011	A combined motivation and parent-child interaction therapy package reduces child welfare recidivism in a randomize	EBSCOHost	9/19/23	9/19/23
2019	A comparison of 2 online parent skills training interventions for early childhood brain injury: Improvements in interna	EBSCOHost	9/11/23	9/11/23
2018	A comparison of emergency department medical records to parental self-reporting of traumatic brain injury symptom	EBSCOHost	8/28/23	8/28/23
2003	A comparison of mother's and father's experience of parenting stress and attributions for parent-child interaction out	EBSCOHost	9/19/23	9/19/23
2019	A comparison of student and parent knowledge and perceived confidence about brain injury and concussion	EBSCOHost	9/19/23	9/19/23
1994	A comparison of two psychosocial interventions for parents of children with acquired brain injury: An exploratory stu	EBSCOHost	7/25/23	7/25/23
2015	A critical examination of mild traumatic brain injury management information distributed to parents	EBSCOHost	7/25/23	7/25/23
2023	A Cross-Sectional Study: Structural and Related Functional Connectivity Changes in the Brain: Stigmata of Adverse Par	EBSCOHost	9/14/23	9/14/23
2019	A cross-sectional study on intergenerational parenting and attachment patterns in adult children of parents with men	EBSCOHost	7/25/23	7/25/23
2020	A crossed-disciplinary evaluation of parental perceptions surrounding pediatric non-invasive brain stimulation researc	EBSCOHost	9/14/23	9/14/23

SECOND SCREENING

YEAR	ABBREVIATED TITLE	DATABASES/ SOURCES	FULL-TEXT SCREEN?	INCL: Culture	INCL: Intergenerational	INCL: Parenting	INCL: Attachment	INCL: Neuroscience
1961	A clinical approach to parent-child interaction	PubMed	no	no	no	yes	yes	no
2022	A Cohort Study on the Effect of Parental Mind-Mindedness in Parent-Child Interaction Therapy	EBSCOHost	no	no	no	yes	yes	no
2011	A combined motivation and parent-child interaction therapy package reduces child welfare recidivism in a randomize	EBSCOHost	no	no	no	yes	yes	no
2019	A comparison of 2 online parent skills training interventions for early childhood brain injury: Improvements in interna	EBSCOHost	no	no	no	yes	no	yes
2018	A comparison of emergency department medical records to parental self-reporting of traumatic brain injury symptom	EBSCOHost	no	no	no	yes	no	yes
2003	A comparison of mother's and father's experience of parenting stress and attributions for parent-child interaction out	EBSCOHost	no	no	no	yes	yes	no
2019	A comparison of student and parent knowledge and perceived confidence about brain injury and concussion	EBSCOHost	no	no	no	yes	no	yes
1994	A comparison of two psychosocial interventions for parents of children with acquired brain injury: An exploratory stu	EBSCOHost	no	no	no	yes	no	yes
2015	A critical examination of mild traumatic brain injury management information distributed to parents	EBSCOHost	no	no	no	yes	no	yes
2023	A Cross-Sectional Study: Structural and Related Functional Connectivity Changes in the Brain: Stigmata of Adverse Par	EBSCOHost	no	no	no	yes	no	yes
2019	A cross-sectional study on intergenerational parenting and attachment patterns in adult children of parents with men	EBSCOHost	no	no	yes	yes	yes	no
2020	A crossed-disciplinary evaluation of parental perceptions surrounding pediatric non-invasive brain stimulation researc	EBSCOHost	no	no	no	yes	no	yes
2016	A cultural-historical reading of how play is used in families as a tool for supporting children's emotional development	EBSCOHost	no	yes	no	yes	no	no

APPENDIX D

Data Spreadsheet

DATA SPREADSHEET

Document ID#	AUTHOR(S)	YEAR	ABBREVIATED TITLE	AIM OF THE STUDY:	GENERAL METHOD:	DESIGN OR SPECIFIC RESEARCH APPROACH:
1	Howard, Lisa; Howell, Rac	2021	(Re)configuring moral boundar	The main objective of the study was	Qualitative	The research design of the study is qualitative and employs in-depth
2	Hellmann, Deborah F; Still	2018	(Why) do victims become perp	The aim of the study described in	Quantitative	The study appears to be a quantitative study. The methods used in the
3	Bello, B. M., Fatusi, A. O.,	2017	Adolescent and parental reacti	The main objective of the study is to	Qualitative	The study used a qualitative research approach. Data was collected
4	Wake, S. B., & Sporakowsk	1972	An Intergenerational Comparis	The purpose of this study is to	Quantitative	In this study, the specific research methods used were questionnaires
5	Dellmann-Jenkins, M., Hol	2005	An intergenerational perspecti	The main objective of the study was	Quantitative	The research methods used in the study involved a combined structured
8	Mitchell, B. A., Wister, A. V	2019	Are the Parents All Right? Pare	The aim of the study is to examine	Mixed	The study used a mixed-methods approach, combining quantitative and
12	Hjälm, A.	2012	Because we know our limits: El	The aim of the study is to explore	Qualitative	The study employed interviews with 14 elderly parents residing in close
16	Burke, J., Fitzhenry, M., Ho	2021	Breaking the cycle of intergene	The specific aim of the study was to	Mixed	The research design used in this study is a mixed-methods, triangulation
18	Sieben, I.	2017	Child-rearing values: The impac	The specific goals of this study were	Mixed	The study used a research method called diagonal reference modeling
19	Daud, A., Skoglund, E., & R	2005	Children in families of torture v	The study's focused objectives aim	Mixed	The methods used in the study involved comparing two groups of
21	Sun, L., Fu, Z., Li, P., & Gon	2021	Chinese parenting beliefs in the	The specific aims of the study were	Quantitative	The researchers used a combination of research methods in this study.
22	Yang, M., Chen, I.-J., Song,	2021	Comparison of intergeneration	The specific goals or objectives of	Quantitative	The study used a paired survey design, collecting data from both
23	Rothenberg, W. A., Lansfo	2021	Cross-cultural associations of fa	The specific goals of this study were	Mixed	The paper uses mixed methods, combining both quantitative and
24	Thigpen, C., & Handy, S.	2018	Driver's licensing delay: A retro	The study aims to explore the causes	Mixed	The study explores the causes of the decreased trend in obtaining
26	Barnett, S., Buckroyd, J., &	2005	Eating disorders from parent to	The specific goals of the research	Mixed	In the research project, both qualitative and quantitative methods were
27	Shechory-Bitton, M., Ben	2015	Effect of Ethnicity on Parenting	The study sought to investigate the	Mixed	The study employed a "snowball" process for participant recruitment,
28	Rhodes, C. A., Wolchik, S.	2023	Effects of a preventive parentin	The specific goals of this study were	Mixed	The study implemented the Family Bereavement Program (FBP), a
29	Mahrer, N. E., Winslow, E.	2014	Effects of a Preventive Parentin	The specific goals of the study were	Mixed	The study evaluated the effects of the New Beginnings Program (NBP), a

Document ID#	STUDY LOCATION:	POPULATION CHARACTERISTICS:	RESULTS (CULTURE):	RESULTS (INTERGENERATIONAL):
1	United Kingdom	The study was carried out in the United	The paper does not explicitly discuss the role of	The study found that activist parents in the UK
2	Germany	The study population consisted of individuals	The text discusses various factors related to	The specific results mentioned in the text
3	Nigeria and Kenya	The study involved a total of 66 participants,	The study contributes to our understanding of	This paper is important because it examines the
4	United States (Illinois)	The study involved a total of 225 Caucasian	Adolescents' reactions to puberty were similar	Older people assert a right to support from
5	United States	The study included a total of 210 participants,	The study recruited a diverse sample of young	The specific findings regarding
8	Canada (British Columbia)	The study included parents aged 50 and above	The paper defines and discusses culture in the	The findings related to intergenerational
12	Sweden	The study involved 14 elderly parents who were	The provided sources do not directly address	The study investigates intergenerational
16	Ireland	The study included a sample of 30 participants	The participants expressed a sense of pressure	The program explored parents' own
18	Netherlands	The study achieved a response rate of 50.4%,	The study delves into child-rearing values	The study investigates the relationship between
19	Sweden	The study involved a comparative analysis of 15	The study, while comparing families from a	The study set out to empirically investigate the
21	China (Henan and Sichuan)	The sample size of the study comprised 632	The study conducted an investigation into the	The study's findings underscore the significant
22	China (Suzhou)	The survey in Suzhou utilized a cluster sampling	The study highlights the significant impact of	The study conducted a thorough examination
23	China (Shanghai); Colombia (Medellín); Italy (Naples	The study included a sample size of 1,338	The study investigated the effects of parenting	The study found that higher levels of neglect in
24	United States (California)	The study was conducted at the University of	The findings of the study suggest that the delay	The findings related to intergenerational
26	United Kingdom	The therapy group consisted of eight mothers	Regarding perceptions, attitudes, and beliefs of	Unfortunately, the document does not provide
27	Israel	The study involved a sample of 374	The study found cultural differences in	The study uncovered intergenerational
28	United States	The study involved 156 parents and 244 young	The Family Bereavement Program (FBP)	The Family Bereavement Program (FBP)
29	United States (Arizona)	The study included a sample of 240 mothers	The findings of the study showed that the New	The study examined the effects of the New

Document ID#	RESULTS (PARENTING):	RESULTS (ATTACHMENT):	RESULTS (NEUROSCIENCE):	RESULTS (OTHER):
1	The study found that the role of parenthood	No	No	The study identified a significant gap in UK
2	The specific results related to parenting	No	No	The study found that 52.6% of the participants
3	Parents expressed concerns about implications	No	No	Adolescents' reactions to puberty varied from
4	The parent group scored statistically	No	No	The study investigated generational differences
5	The study recruited a diverse sample of young	No	No	Both young parents and middle-aged/older
8	The study defines parental stress as the level of	No	No	The research discovered that Persians/Iranians
12	The provided sources do not directly address	No	No	Geographical distance and proximity play a role
16	The parenting group intervention,	No	No	The Understanding Your Child's Behaviour
18	The study delves into child-rearing values,	No	No	The study undertakes a nuanced exploration of
19	The study, while not specifically focusing on	No	No	The study delved into the mental health
21	The study delved into the dynamics of parental	No	No	The study's findings shed light on the
22	The study suggests that parental child-rearing	No	No	The study conducted a comprehensive
23	The study examines the specificity and	No	No	The study examines the specificity and
24	The specific findings related to parental	No	No	The main findings of the study indicate that the
26	The findings related to parenting in the context	No	No	The findings of the research project suggest
27	The study examined the parenting styles and	No	No	The study delved into the impact of ethnicity
28	Parenting attitudes and behaviors exhibit a	No	No	physical punishment, with offspring in the FBP
29	Attitudes about parenting, such as warm	No	No	The study evaluated the effects of the New

Document ID#	DECISION NOTES:	FUTURE RESEARCH:	IMPLICATIONS FOR CLINICAL PRATICE:	STUDY LIMITATIONS:
1	related to question 1	The paper suggests several gaps and limitations	The paper's findings highlight the importance	The potential limitations of the study include
2	related to question 1	Future research in this area could explore the	The paper's implications for clinical practice	Limitations include self-report and
3	related to question 1	The research findings underscore the	The findings have potential implications for	Limitations include the challenges of
4	related to question 1	The current research on intergenerational	Understanding adolescents' reactions to	Based on the provided information, limitations
5	related to question 1	It primarily focuses on the roles that	The findings suggest that there are differences	The limitations of the study include a small
8	related to question 1	Further conceptual advancements in	Family services for aging parents should	The sample used in the study was collected
12	related to question 1	The inclusion of both generations in a	Healthcare professionals should be aware that	The study acknowledges the limitation of only
16	related to question 1	Future studies should employ a control group	The Understanding your Child's Behaviour	The research did not utilize a control group,
18	related to question 1	Future research on child-rearing values and	The research findings underscore a nuanced	While the study offers valuable insights into the
19	related to question 1	The call for further research articulated in these	The study underscores a critical imperative for	None given.
21	related to question 1	Future studies on the intergenerational	The study's findings underscore the significance	The study's cross-sectional design poses
22	related to question 1	The study's findings open avenues for further	Clinicians working with individuals and families	The study's cross-sectional design presents a
23	related to question 1	Prospective examination of G1 parenting to	The practical implications of the findings for	The study acknowledges several limitations.
24	related to question 1	The main findings of the study indicate that the	The practical implications of the findings in the	None provided
26	related to question 1	Future research in this area could explore the	The findings of this study suggest that clinicians	The study has limitations in terms of the small
27	related to question 1	The study puts forth several promising	The findings of this study have practical	None listed
28	related to question 1	The potential areas for future research	The findings of this study suggest that the	The limitations of the study are not explicitly
29	related to question 1	Future research could explore the long-term	The findings of this study have important	The study limitations mentioned in the text

APPENDIX E

Appraisal of Studies

QUALITY SPREADSHEET

Document ID#	AUTHOR(S)	YEAR	ABBREVIATED TITLE	DATE COMPLETED:	GENERAL METHOD:	DESIGN OR SPECIFIC RESEARCH APPROACH:
1	Howard, Lisa; Howell, Rac	2021	(Re)configuring moral boundaries of intergener	12/16/23	Qualitative	The research design of the study is qualitative and employs in-depth
2	Hellmann, Deborah F; Still	2018	(Why) do victims become perpetrators? Interge	12/16/23	Quantitative	The study appears to be a quantitative study. The methods used in the
3	Bello, B. M., Fatusi, A. O.,	2017	Adolescent and parental reactions to puberty ir	12/16/23	Qualitative	The study used a qualitative research approach. Data was collected
4	Wake, S. B., & Sporakowsk	1972	An Intergenerational Comparison of Attitudes T	12/16/23	Quantitative	In this study, the specific research methods used were questionnaires
5	Dellmann-Jenkins, M., Hol	2005	An intergenerational perspective on grandparer	12/16/23	Quantitative	The research methods used in the study involved a combined structured
6	Neoh, Michelle Jin Yee; Lie	2023	An intergenerational study of parental bonding	12/16/23	Quantitative	The study utilized several methods. The researchers recruited 134
7	Swain, J.E.; Kim, P.; Spicer,	2014	Approaching the biology of human parental att	12/16/23	Mixed	The study uses a meta-analysis of magnetic resonance imaging (MRI)
8	Mitchell, B. A., Wister, A. V	2019	Are the Parents All Right? Parental Stress, Ethni	12/16/23	Mixed	The study used a mixed-methods approach, combining quantitative and
9	Siegel, Daniel J.	2004	Attachment and Self-Understanding: Parenting	12/17/23		The paper is an adaptation of a chapter from a text edited by Marci
10	Leblanc, É., Dégeilh, F., Da	2017	Attachment security in infancy: A preliminary st	12/17/23	Quantitative	The study in question employed the Attachment Q-Sort (AQS) measure
11	Friedson, M.	2016	Authoritarian parenting attitudes and social ori	12/17/23	Quantitative	Ordered logit models were applied to General Social Survey data to
12	Hjälm, A.	2012	Because we know our limits: Elderly parents' vi	12/17/23	Qualitative	The study employed interviews with 14 elderly parents residing in close
13	Li, Yiman; Zhou, Zheyi; Zha	2023	Brain development mediates the relationship b	12/18/23	Quantitative	The researchers collected data through functional brain imaging and
14	Suth, Andrew	2014	Brain-based parenting: The neuroscience of car	12/18/23		The paper is a book review.
15	Scharke, Wolfgang; Reindl	2018	Brain-to-brain synchrony in parent-child dyads a	12/18/23	Quantitative	The data was collected using functional near-infrared spectroscopy
16	Burke, J., Fitzhenry, M., Ho	2021	Breaking the cycle of intergenerational trauma:	12/18/23	Mixed	The research design used in this study is a mixed-methods, triangulation
17	Ford, Meghan K; Roberts,	2022	Building I-INTERACT-North: Participatory Action	12/18/23	Mixed	The study utilized a participatory action research design to adapt the
18	Sieben, I.	2017	Child-rearing values: The impact of intergenera	12/18/23	Mixed	The study used a research method called diagonal reference modeling

Document ID#	STRENGTH OF LITERATURE FOUNDATION AND RATIONALE FOR STUDY:	CLARITY AND SPECIFICITY OF RESEARCH AIMS/OBJECTIVES/QUESTIONS/HYPOTHESES:	QUALITY OF RESEARCH DESIGN OR METHODOLOGICAL APPROACH:	SAMPLE SELECTION AND CHARACTERISTICS:
1	1	1	2	2
2	1	1	2	2
3	3	4	2	3
4	4	3	3	3
5	4	3	4	3
6	3	4	2	3
7	4	3	3	3
8	4	3	4	3
9	0	0	0	0
10	4	4	3	4
11	4	3	4	4
12	0	0	0	0
13	4	4	4	4
14	0	0	0	0
15	4	4	3	3
16	3	4	2	3
17	4	4	3	4
18	4	3	4	4

Document ID#	DISCUSSION OF STUDY LIMITATIONS:	CONSIDERATION OF CULTURE AND DIVERSITY:	DECISION NOTES:	OVERALL RATING:
1	2	1	related to question 1	1.44
2	1	0	related to question 1	1.00
3	3	4	related to question 1	3.33
4	4	4	related to question 1	3.67
5	3	4	related to question 1	3.33
6	3	4	related to question 2	3.33
7	4	4	related to question 3	3.67
8	3	4	related to question 1	3.33
9	0	0	related to question 3	0.00
10	2	3	related to question 3	3.33
11	4	4	related to question 2	3.67
12	0	0	related to question 1	0.00
13	4	4	related to question 3	3.56
14	0	0	related to question 3	0.00
15	4	3	related to question 3	3.44
16	3	4	related to question 1	3.33
17	2	3	related to question 3	3.33
18	4	4	related to question 1	3.67

Document ID#	DATA COLLECTION TOOLS (SCALES, OBSERVATIONS, INTERVIEWS, ETC.):	DATA COLLECTION PROCESSES:	ANALYSIS AND PRESENTATION OF DATA:	DISCUSSION OF STUDY LIMITATIONS:
1	1	2	1	2
2	1	1	0	1
3	3	4	4	3
4	4	4	4	4
5	4	3	2	3
6	3	4	4	3
7	4	4	4	4
8	4	3	2	3
9	0	0	0	0
10	4	3	3	2
11	3	3	4	4
12	0	0	0	0
13	3	2	3	4
14	0	0	0	0
15	3	3	4	4
16	3	4	4	3
17	4	3	3	2
18	3	3	4	4

APPENDIX F

IRB Nonhuman Subjects Form

February 9, 2024

Protocol #: **2924**

Project Title: THE INTERGENERATIONAL TRANSMISSION OF CULTURE THROUGH ATTACHMENT-BASED PARENTING PRACTICES AND THEIR EFFECTS ON CHILD NEUROLOGY.

Dear Elvina:

Thank you for submitting a "GPS IRB Non-Human Subjects Notification Form" for *THE INTERGENERATIONAL TRANSMISSION OF CULTURE THROUGH ATTACHMENT-BASED PARENTING PRACTICES AND THEIR EFFECTS ON CHILD NEUROLOGY* project to Pepperdine University's Institutional Review Board (IRB) for review. The IRB has reviewed your submitted form and all ancillary materials. Upon review, the IRB has determined that the above titled project meets the requirements for *non-human subject research* under the federal regulations 45 CFR 46.101 that govern the protection of human subjects.

Your research must be conducted according to the form that was submitted to the IRB. If changes to the approved project occur, you will be required to submit *either* a new "GPS IRB Non-Human Subjects Notification Form" or an IRB application via the eProtocol system (httpw://irb.pepperdine.edu) to the Institutional Review Board.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at https://community.pepperdine.edu/irb/policies/.

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval.

On behalf of the IRB, we wish you success in this scholarly pursuit.

Sincerely,

Institutional Review Board (IRB)
Pepperdine University

cc: Mrs. Katy Carr, Assistant Provost for Research
Dr. Judy Ho, Graduate School of Education and Psychology IRB Chair

APPENDIX G

List of Included Literature

Document ID#	AUTHOR(S)	YEAR	ABBREVIATED TITLE	DECISION NOTES:
1	Howard, Lisa; Howell, Rac	2021	(Re)configuring moral boundaries of intergenerational justice:	related to question 1
2	Hellmann, Deborah F; Still	2018	(Why) do victims become perpetrators? Intergenerational tra	related to question 1
3	Bello, B. M., Fatusi, A. O.,	2017	Adolescent and parental reactions to puberty in Nigeria and K	related to question 1
4	Wake, S. B., & Sporakowsk	1972	An Intergenerational Comparison of Attitudes Towards Suppo	related to question 1
5	Dellmann-Jenkins, M., Hol	2005	An intergenerational perspective on grandparent roles: views	related to question 1
8	Mitchell, B. A., Wister, A. V	2019	Are the Parents All Right? Parental Stress, Ethnic Culture and I	related to question 1
12	Hjälm, A.	2012	Because we know our limits: Elderly parents' views on interge	related to question 1
16	Burke, J., Fitzhenry, M., Ho	2021	Breaking the cycle of intergenerational trauma: Evaluating the	related to question 1
18	Sieben, I.	2017	Child-rearing values: The impact of intergenerational class mo	related to question 1
19	Daud, A., Skoglund, E., & F	2005	Children in families of torture victims: transgenerational trans	related to question 1
21	Sun, L., Fu, Z., Li, P., & Gon	2021	Chinese parenting beliefs in the intergenerational transmissio	related to question 1
22	Yang, M., Chen, I.-J., Song,	2021	Comparison of intergenerational transmission of gender roles	related to question 1
23	Rothenberg, W. A., Lansfo	2021	Cross-cultural associations of four parenting behaviors with ch	related to question 1
24	Thigpen, C., & Handy, S.	2018	Driver's licensing delay: A retrospective case study of the imp	related to question 1
26	Barnett, S., Buckroyd, J., &	2005	Eating disorders from parent to child: Mothers' perceptions of	related to question 1
27	Shechory-Bitton, M., Ben I	2015	Effect of Ethnicity on Parenting Styles and Attitudes Toward Vi	related to question 1
28	Rhodes, C. A., Wolchik, S.	2023	Effects of a preventive parenting intervention for bereaved fa	related to question 1
29	Mahrer, N. E., Winslow, E.	2014	Effects of a Preventive Parenting Intervention for Divorced Fa	related to question 1
32	van der Valk, I., Spruijt, E.,	2008	Family traditionalism and family structure: Attitudes and inter	related to question 1
34	Alexander Stein, & USA --	2006	FILM ESSAY : Tricycles, bicycles, life cycles: Psychoanalytic pers	related to question 1
35	Simons, R. L., Beaman, J.,	1992	Gender Differences in the Intergenerational Transmission of P	related to question 1
36	Hashizume, Y.	2000	Gender Issues and Japanese Family-Centered Caregiving for F	related to question 1
37	Gonzalez, H., & Barnett, M	2023	Grandfathers, Fathers, and Sons: Role of Intergenerational Rel	related to question 1
38	Lamborn, S. D., Nguyen, J.	2013	Hmong American adolescents' perceptions of mothers' paren	related to question 1
41	McKenzie, E. F., Thompson	2022	Intergenerational (Dis)continuity of Child Maltreatment: Varia	related to question 1
42	Luyckx, K., Schwartz, S. J.,	2016	Intergenerational associations linking identity styles and proc	related to question 1
43	Lê-Scherban, F., Xi Wang,	2018	Intergenerational Associations of Parent Adverse Childhood E	related to question 1
44	Ginn, C., Perry, R., & Benzi	2023	Intergenerational Attitudes Toward Child Maltreatment: A Mix	related to question 1
45	Ho, D. Y., & Kang, T. K.	1984	Intergenerational comparisons of child-rearing attitudes and p	related to question 1
46	Jung, K., & Honig, A. S.	2000	Intergenerational Comparisons of Paternal Korean Child Reari	related to question 1
47	Dennis, J., Basañez, T., & F	2010	Intergenerational Conflicts Among Latinos in Early Adulthood:	related to question 1
48	Wu, C., & Chao, R. K.	2005	Intergenerational Cultural Conflicts in Norms of Parental Warr	related to question 1
51	Hasenfratz, L., & Knafo-Nc	2015	Intergenerational cultural transmission: Looking beyond the p	related to question 1
52	Armsworth, M. W., & Stro	1999	Intergenerational Effects of Incest on Parenting: Skills, Abilitie	related to question 1
53	Coe, J. L., Huffhines, L., Co	2020	Intergenerational effects of maternal childhood experiences o	related to question 1
54	Gonzales, N. A., Knight, G.	2018	Intergenerational gaps in Mexican American values trajectorie	related to question 1
55	Kramer, L., & A. Baron, L.	1995	Intergenerational Linkages: How Experiences with Siblings Rel	related to question 1
56	Wagner, D. A., & Spratt, J.	1988	Intergenerational literacy: effects of parental literacy and attit	related to question 1
57	Shebloski, B., & Gibbons, J	1998	Intergenerational patterns in beliefs about women's roles am	related to question 1
58	Ee, C. H., Wen, S. Q., & Sh	2022	Intergenerational Perspectives of Paternal Parenting Practices	related to question 1
59	White, M.	2023	Intergenerational Relationships Between Married Children an	related to question 1

60	Gelso, C. J., Birk, J. M., & P	1978	Intergenerational Relationships in the Development of Child R	related to question 1
61	Mebane, M. E., & Pezzuti,	2020	Intergenerational solidarity in triads of adult grandchild, parer	related to question 1
62	Velázquez, I.	2009	Intergenerational Spanish transmission in El Paso, Texas: Parer	related to question 1
63	Polenick, C. A., Zarit, S. H.,	2017	Intergenerational Support and Marital Satisfaction: Implicatio	related to question 1
64	Sun, K., & Mulvaney, M. K	2021	Intergenerational support in chinese immigrant families: The	related to question 1
65	Hanson, R. A., & Mullis, R.	1986	Intergenerational transfer of normative parental attitudes.	related to question 1
66	Lukek, S. P.	2015	Intergenerational transfer of parenting styles: Correlations be	related to question 1
67	Phalet, K., & Schönpflug, U	2001	Intergenerational Transmission in Turkish Immigrant Families:	related to question 1
68	Liu, L., Li, S., Zheng, Y., & V	2021	Intergenerational transmission of anxiety in Chinese migrant f	related to question 1
69	Wang, Y.	2018	Intergenerational transmission of depressive symptoms: The r	related to question 1
70	Dimitrova, R., Ferrer-Wrec	2015	Intergenerational transmission of ethnic identity and life satis	related to question 1
71	Erzinger, A. B., & Steiger, A	2014	Intergenerational transmission of maternal and paternal pare	related to question 1
72	Zhang, L., Mersky, J. P., Gr	2022	Intergenerational Transmission of Parental Adverse Childhood	related to question 1
73	Vermeulen, F., & Kranendo	2021	Intergenerational transmission of social identity: dual identifi	related to question 1
74	Babcock Fenerci, R. L., Chu	2016	Intergenerational Transmission of Trauma-Related Distress: M	related to question 1
75	Pratt, M. W., Norris, J. E., H	2008	Intergenerational Transmission of Values: Family Generativity	related to question 1
76	Barni, D., Zagrean, I., Russ	2023	Intergenerational Transmission of Values: From Parent–Child V	related to question 1
77	Sümer, N., Pauknerová, D.	2019	Intergenerational transmission of work values in Czech Repub	related to question 1
79	de Vries, J., & de Graaf, P.	2008	Is the Intergenerational Transmission of High Cultural Activitie	related to question 1
83	Gniewosz, B., & Noack, P.	2012	Mamakind or papakind? [Mom's child or Dad's child]: Parent-s	related to question 1
84	Paryente, B., & Gatenio Ka	2021	Multigenerational reactions to situations of ongoing stress: Ch	related to question 1
86	Chou, F., Buchanan, M., M	2023	Narrative Themes of Chinese Canadian Intergenerational Trau	related to question 1

94	Kraaykamp, G., & Nieuwbo	2000	Parental Background and Lifestyle Differentiation in Eastern E	related to question 1
96	Negriff, S., Fritz, H. L., & Ji,	2023	Parental Depression and Adulthood Adversities as Mediators	related to question 1
97	Zumbuehl, M., Dohmen, T	2021	Parental Involvement and the Intergenerational Transmission	related to question 1
98	Gilman, S. E., Rende, R., Ba	2009	Parental smoking and adolescent smoking initiation: An interg	related to question 1
99	Brenøe, A. A., & Epper, T.	2022	Parenting values and the intergenerational transmission of tin	related to question 1
100	Kane, Jeremy C.; Johnson,	2019	Pathways linking intergenerational cultural dissonance and alc	related to question 1
101	Zhu, Yantong; Zhang, Gen	2022	Patterns of adverse childhood experiences among Chinese pre	related to question 1
102	Schofield, Thomas J.; Cong	2014	Positive Parenting, Beliefs About Parental Efficacy, and Active	related to question 1
103	Taylor, Denny	1983	Reflections on parenting: A multigenerational perspective	related to question 1
105	Peters, Cheryl L.	2005	Review of Intergenerational Ambivalences: New Perspectives	related to question 1
109	Jackson, Peter	2018	The Impact of Parents and Family in the Prevention and Treat	related to question 1
110	Ochoa, Lucas G.; Fernande	2021	The intergenerational impact of adverse childhood experience	related to question 1
112	Chin-Chun Yi; Chin-Fen Ch	2004	The Intergenerational Transmission of Family Values: A Compa	related to question 1
113	Rothenberg, W. Andrew; L	2023	The Intergenerational Transmission of Maladaptive Parenting	related to question 1
123	Schönpflug, Ute; Yan, Song	2013	The Role of Parental and Child Motivation in the Intergenerati	related to question 1
124	Gottfredson, Nisha C.; Hus	2017	The role of parental engagement in the intergenerational tran	related to question 1
125	Smith, R L; Stagnitti, K; Lev	2015	The views of parents who experience intergenerational pover	related to question 1
127	Lundberg, M.; Perris, C.; A	1999	Transcultural influences on the perception of parental rearing	related to question 1
128	Ahmadian-Moghadam, Ha	2019	TRANSGENERATIONAL INFLUENCE OF PARENTAL MORPHINE E	related to question 1
129	Kaferly, James; Furniss, An	2020	Transmission of Intergenerational Parenting Attitudes and Nat	related to question 1
133	Renzaho, Andre M N; Dhir	2017	Youth as contested sites of culture: The intergenerational accu	related to question 1
6	Neoh, Michelle Jin Yee; Lie	2023	An intergenerational study of parental bonding on perception	related to question 2

49	Chunxia Wu, & Chao, R. K.	2011	Intergenerational Cultural Dissonance in Parent-Adolescent Re	related to question 2
50	Choi, Yoonsun; He, Michae	2008	Intergenerational Cultural Dissonance, Parent-Child Conflict a	related to question 2
78	Atterberry, A. L., McCallun	2022	Interrogating parenting and intergenerational relationships w	related to question 2
80	Yang, J., & Zheng, Y.	2019	Links between perceptions of successes, problems and health	related to question 2
95	Raffagnato, A., Angelico, C	2021	Parental Bonding and Children's Psychopathology: A Transgen	related to question 2
111	Torabian, M., Zanjari, N., F	2022	The intergenerational relationship patterns between aging pa	related to question 2
117	Yang, M., Haydon, K. C., &	2013	The relationship between intergenerational cultural conflict a	related to question 2
130	Aquilino, W. S.	1999	Two Views of One Relationship: Comparing Parents' and Youn	related to question 2
131	Rosenthal, D., Ranieri, N.,	1996	Vietnamese Adolescents in Australia: Relationships between F	related to question 2
132	Merz, E.-M., Consedine, N	2009	Wellbeing of adult children and ageing parents: associations v	related to question 2
7	Swain, J.E.; Kim, P.; Spicer,	2014	Approaching the biology of human parental attachment: Brair	related to question 3
9	Siegel, Daniel J.	2004	Attachment and Self-Understanding: Parenting with the Brain	related to question 3
10	Leblanc, É., Dégeilh, F., Da	2017	Attachment security in infancy: A preliminary study of prospe	related to question 3
13	Li, Yiman; Zhou, Zheyi; Zha	2023	Brain development mediates the relationship between self-re	related to question 3
14	Suth, Andrew	2014	Brain-based parenting: The neuroscience of caregiving for hea	related to question 3
15	Scharke, Wolfgang; Reindl	2018	Brain-to-brain synchrony in parent-child dyads and the relatio	related to question 3
17	Ford, Meghan K; Roberts,	2022	Building I-INTERACT-North: Participatory Action Research Des	related to question 3
25	Osher, D., Cantor, P., Berg,	2020	Drivers of Human Development: How Relationships and Conte	related to question 3
30	Lalonde, Gabrielle; Bernie	2020	Factors contributing to parent-child interaction quality followi	related to question 3
31	Ganesalingam, Kalaichelvi	2008	Family burden and parental distress following mild traumatic	related to question 3
33	Moser, Jason S.; Fisher, Mo	2018	Feedback-related neurophysiology in children and their paren	related to question 3
40	Garcia, Dainelys; Rodrígue	2021	Intensive Parent-Child Interaction Therapy for Children with T	related to question 3

81	Dégeilh, F., Leblanc, É., Da	2023	Longitudinal associations between mother-child attachment s	related to question 3
82	Wall, Glenda	2018	Love builds brains: Representations of attachment and childre	related to question 3
85	Cui, J., Mistur, E. J., Wei, C	2018	Multilevel factors affecting early socioemotional development	related to question 3
87	Fleming, A. S., O'Day, D. H	1999	Neurobiology of mother-infant interactions: Experience and c	related to question 3
88	Graf, Nina; Zanca, Roseann	2022	Neurobiology of parental regulation of the infant and its disru	related to question 3
89	Schneider-Hassloff H, Stra	2016	Oxytocin receptor polymorphism and childhood social experie	related to question 3
90	Cohen, Matthew L.; Heato	2012	Parent-child interaction therapy as a family-oriented approach	related to question 3
91	Wade, Shari L.; Taylor, H. C	2008	Parent-child interactions during the initial weeks following bra	related to question 3
92	Swain, James E.; Ho, S. Sha	2017	Parent-child intervention decreases stress and increases mate	related to question 3
93	Weisman, Omri; Feldman,	2012	Parental and romantic attachment shape brain processing of i	related to question 3
104	Stewart, Colin E.; Dingle, A	2013	Review of Brain-based parenting: The neuroscience of caregiv	related to question 3
106	SHULTZ, SUSANNE; DUNBA	2010	Social bonds in birds are associated with brain size and contin	related to question 3
107	Samadi, Sayyed Ali	2021	The Challenges of Bringing Up a Child with Autism Spectrum D	related to question 3
108	Takeuchi, Hikaru; Taki, Yas	2015	The impact of parent-child interaction on brain structures: cro	related to question 3
114	Bailey, M.J.; Sabbagh, M.	2015	The neurobiology of parenting memories and adult attachme	related to question 3
115	Brody, Gene H.; Yu, Tianyi;	2019	The protective effects of supportive parenting on the relation	related to question 3
116	Chadwick, Leah; Marbil, M	2023	The relation between parental and family functioning and pos	related to question 3
118	Vriezen, Ellen R.; Pigott, Su	2002	The Relationship Between Parental Report on the BRIEF and P	related to question 3
119	Tian, Qu; Pilling, Luke C.; A	2020	The relationship of parental longevity with the aging brain-res	related to question 3
120	Wade, Shari L.; Cassedy, A	2011	The relationship of parental warm responsiveness and negativ	related to question 3
121	Hayden, Elizabeth P.; Klein	2010	The role of brain-derived neurotrophic factor genotype, paren	related to question 3
122	Don, B. P., Roubinov, D. S.,	2022	The role of interparental relationship variability in parent–chil	related to question 3