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Factors Influencing Development of Self-Concept in Infants: A Systematic Review

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ABSTRACT

The current systematic review is executed for the identification of factors influencing development of self-concept in infants. The growth of the infant is characterized by changes in the physiological and cognitive self, including prominent factors such as role of caregivers/parents, imitation and social learning, cognitive development, and sensory perceptions. Following the PICo Guidelines, the meta-synthesis was carried out to explore the relationship between the development of self-concept in infants under two years and the factors influencing its development. Databases including Google Scholar, Consensus, National Institute of Health, Scispace, PubMed, Elicit and ResearchGate were utilized in the search, administering the keywords relating to self-concepts and infants. Of the preliminary 150 articles, approximately fifty-four met the inclusion criteria and provided valuable insight into what aspects of the external and internal environment of an infant influence the ecological and interpersonal self-growth. There is a positive relationship between the parent's love and warmth and the self-concept of infants. Moreover, family symphony and type of parenting play a significant role in how infants perceive themselves along with secure maternal attachment, whereas infants that have an insecure relationship with their mothers tend to have lower self-worth and poor psychosocial functioning. The cognitive development of the infant also plays a notable role in the development of self, due to the cognitive mapping of intuitive processes in infants. Perception of senses such as touch and vision also play a substantial role because of proprioception and optical flow impacting self-recognition.

KEYWORDS

meta-synthesis; self-concept; infants; cognition; sensation; maternal attachment; reciprocal social interaction.

INTRODUCTION

One way to conceptualize self-concept is as a framework that determines and shapes an individual's thoughts and emotions about them, other people, and their social connections. (Leary and Tangney, 2013; Vazire and Wilson, 2012, as cited in Showers et al., 2015). It can also be explained as a group of attitudes or opinions a person holds about themselves. Many theorists consider this to be the most important part of a person's functioning, as it builds the primary and central perception of an event and continuously impacts the behavioral response. (Burns and Dobson, 1984). It is considered to be a complex and organized yet dynamic and fluid system that seems to persist in a stable manner over time, yet is malleable and continues to be shaped by a person's experiences and self-views over time. (Wehrle & Fasbender, 2018). Neonates from an early age are able to ascertain the difference between self and non-self-stimulation through their own passive and active interactions with the environment, thereby indicating the presence of self-concept (Kellman et al., 1987). The National Institute of Child Health and Human Development states that the time from birth to two years old is typically regarded as infancy, although the timelines of development vary from theory to theory. (About Infant Care and Infant Health, 2021). Jean Piaget has also described this duration as the "sensorimotor stage" in his theory of cognitive development (Piaget, 2000).

Notion of Self

The notion of self involves comprehension of an individual's identity, which includes physical, emotional, social, spiritual, and diverse elements. With time, as our self-awareness develops this conceptualization changes. It is a dynamic concept whose separate dimensions can be examined. Practitioners and academics should define the term "self-concept assessment" precisely and select an instrument or approach that best fits the definition in order to measure it. With this exact definition, the construct validation process begins (Goodstein, 1978). The Piers-Harris Children's Self-Concept Scale (Sun, 2005) and the Tennessee Self Concept Scale (Fitts, 1991) are two often used tools with global tradition roots that provide scales relevant to a particular topic. Checklists provide qualitative insights by asking respondents to choose appropriate adjectives. Nevertheless, they are limited by the use of binary replies (yes/no) and external categorization that does not consider personal interpretations. Q-sorts include organizing self-descriptor cards into predetermined piles and offer both quantitative and qualitative insights; nonetheless, they are time-consuming and less common among counselors. Free-response techniques are less common in self-concept research because of their lower dependability, counselors find that their qualitative, open-ended character is useful for promoting discussions (Strein, 1995). While they are rare in the literature on self-concept, experimental studies can evaluate some features of the construct definition against competing theories (Shavelson, 1977).

Developmental Milestones

In the first year of a newborn's lifespan, a crucial developmental milestone involves the recognition of their facial expressions and limb movements as similar to those of other individuals. This remarkable ability demonstrates the cognitive progress that occurs during this critical stage of human development (Bahrick, 1996). Infants begin to associate their own physique and facial movements with the image of themselves in a mirror between the ages of 15 and 18 months, a phenomenon known as mirror self-recognition, they begin to demonstrate reflective self-awareness (Loveland, 1986; Mitchell, 1993; Rochat, 1995). By 24 to 26 months of age, this ability appears to be present in approximately all typically developing children. It is linked to other traits associated with an individual's identity, such as self-referential and feelings of self-consciousness (Lewis & Brooks-Gunn, 1979; Lewis & Ramsay, 2004; Lewis et al., 1989; Stipek et al., 1990). Positive expectations for oneself and others, coupled with a securely bonded baby, increase the likelihood that the child will "approach the world with confidence and, when presented with potentially worrisome situations, is likely to tackle them effectively or to seek support in doing so." On the other hand, low self-esteem has been noted in children with disordered attachment. Thus, it appears that childhood's physical self lays the groundwork for the formation of objective self-awareness in the second year of life, which then matures into kindergarten and subsequent self-concept development (Bowlby, 1973).

Rationale

Developing the self-concept of an infant is crucial to shaping their cognitive, social, and emotional well-being. The foundation of personality and self-awareness is established and initiated during the postnatal stage. By researching the various factors that contribute to establishing the self-concept of an infant, this research aims to provide valuable insights that can guide parenting techniques, early childhood education, and treatments for optimal development.

This perspective dispenses an exceedingly deeper understanding of the factors involved in the development of an infant's self-concept.

METHOD

Assessment and Measures

This study consists of a meta-synthesis, carried out using the PICo (Population, Intervention & Comparison) Tool to help identify key research points and factors. This tool provides a set of elements that allow clear presentation of the information (Higgins & Green, 2008). Our key elements are identified below:

P: Infants

I: Factors influencing development of self-concept

Co: Development of infant’s self-concept

Eligibility Criteria

All included papers dealt with participants below the age of 2 years, with those above 2 years being excluded from the search. Papers written in languages other than English, or mentioning a conflict of interest were also excluded.

Search Strategy

Preliminary Search

The authors referred to the PICO protocol and guidelines to create the base of the research paper and the title formation. The authors searched every related literature available for the topic on hand. The keywords mentioned below were used. All the affiliated research papers were then segregated according to relevance and a list of factors was made which were proved to affect the development of an infant in some way. The list of exclusion and inclusion criteria was created. All the research papers were taken which included the inclusive criteria and the list of factors made. The papers published in the span of the past 30 years till date have been considered. All the papers included in the research are written in the English language.

The areas that were studied were then equally distributed among the authors, and each author researched the significance of the factors on an infant's self-concept and its development given to him/her. All the relevant papers were segregated based on correlation, which included the highest correlation to the lowest. The papers included in the research were paraphrased and the PICO guidelines were understood to proceed further in the writing and accommodation of every information gathered and the formation of the research paper according to the said protocol. The focus is on increasing the accuracy and at the same moment maintaining a prominent level of recall important to ensure that systematic reviews are prototypical and impartial. Regulating the search strategies to pair the studies using the PICO explanation improves accuracy, however, recall is slightly minimized when compared to the non-PICO baseline (Scells et al., 2017). Quality Appraisal of the paper was done to ensure its validity. A list of all the possible journals was made to finalize the most relevant journal to publish the Research paper in question.

Using the keywords:

Infants - Postnatal, developing child, newborn, babies

Influence - Affect, impact, helping, determine,

Development of self-concept - etiology of self-concept development, factors affecting origin of self-concept, evolution, formation

Quality Appraisal

The review addresses a clearly focused question. The research was conducted with the focus being on infants and the key factors that affect the development of self-concept in them. The authors have also looked at the right type of papers. All the papers address the review's question from multiple perspectives while being focused on the main objective. However, even though all the important, relevant studies available online were included and references were taken from multiple legitimized sites such as PubMed, Google Scholar, Sci-Hub, Consensus, and many

more, which are mentioned below. However, due to restrictions on access to physical documents, they could not be included, unless we consider them we cannot say for sure that all the relevant, important studies were included.

The studies included were legitimized and scanned multiple times, and the inclusion criteria were taken into consideration to segregate and include the most relevant papers. Multiple papers have been referred to for every topic to make sure it affects the development of self, which also, in turn, reduces the risk of bias. Both qualitative and quantitative papers have been ruminated, and the research paper is written according to the PICO protocol. The results of each included study are displayed in the research paper. The results of the review can be considered precise if we take into account only the review of available online papers due to restrictions on access to physical documents and research papers. Many relevant papers might be missed due to unavailability, but overall, the research is precise as the available documents have been extracted from legitimate sites and reviewed multiple times.

The results can be applied to local populations, as the focus of the research is infants, but they are not confined to any particular city, state, or country. Infants globally have been taken into consideration. The authors have also pondered other outcomes for the paper, such as a particular factor affecting the development of self. There were also instances where many more factors were considered but were not included due to a lack of strong evidence of their effect on the self.

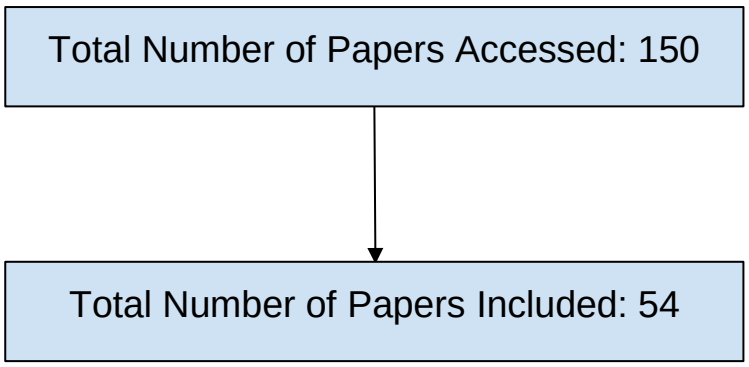
Data Collection

Sources of information

The databases taken for the preliminary research were Google Scholar, Consensus, National Institute of Health, Scispace, PubMed, Elicit and Researchgate, taking articles published until November 2023. The total number of papers accessed was 150. Out of the following, the total number of papers that were used was approximately 54.

Figure 1.

Number of Papers Accessed and Included



Data Analysis

The following data analysis was conducted in a qualitative manner, making use of common themes found in the papers to classify and extract information. The data was classified on the

basis of theme and topic of interest to ensure clarity during data analysis. Certain papers were unavailable, and as such have not been included.

Table 1. (See Appendix).

RESULTS

Parenting Styles

Studies indicate that the way parents raise their children has a big influence on how they establish their sense of self (Keller et al., 2005). Children's self-perceptions are largely shaped by positive relationships between parents and children. Parents' warmth, love, and support positively impact infants as they develop into confident people with high self-esteem; however, harsh criticism, rejection, or abuse distorts a child's sense of self and breeds emotions of inadequacy and insecurity (Rohmalimna et al., 2022). Cultural and socioeconomic variables may also influence these dynamics (Babbar and Dhankar, 2021). The development of self-recognition portrays cultural disparities- In both German and Cameroonian Nso households, authoritarian parenting style was linked to earlier mirror self-recognition, which suggests that strictness may be the first step toward self-awareness. However, different parenting strategies produced different outcomes. There are cultural differences in how different parenting styles influence self-discovery; German children with permissive parents identified themselves more quickly than Nso children did (Keller et al., 2005). Additionally, we discovered that the harmonious coexistence of parental behavior, child temperament, and family relationships shapes a young child's self-concept within the family (Brown et al., 2009).

Thus, it is critical that parents, caregivers, and professionals understand how parenting styles affect a child's early development of self-concept. Providing a loving and supportive environment throughout an infant's developmental period can have a significant impact on their healthy and positive self-concept, as it builds the groundwork for their future emotional well-being and social competence.

Maternal and Secure Attachment

Newborns create intimate bonds with their primary caregivers during the initial two years of life, enhancing a sense of security and laying the foundation for emotional regulation in the upcoming years. Early childhood trauma, even within the first three months of life, can trigger surviving traumatic stress responses that greatly impact a child's growth. Ainsworth's classification represents four attachment types: resistant (C type), avoidant (A type), disordered (D type), and secure (B type). Infants exhibiting avoidant attachment tendencies may display aggression, while those with resistant attachment tendencies often exhibit social withdrawal. Disordered attachment patterns, characterized by a combination of avoidance and resistance behaviors, are deemed insecure and vulnerable, placing children at risk (Karr-Morse and Wiley, 1997).

Children who experienced secure love were better able to understand and communicate both positive and negative emotions, which improved their social skills. However, children who

were insecurely attached found it challenging to recognize and express both their own and other people's emotions, especially negative ones like grief and rage (Laible and Thompson, 1998). In a study, it was examined that foster mothers' early emotional involvement blossoms into good self-concepts in their children. Low investment, on the other hand, can be a sign of low self-worth and separation anxiety (Ackerman and Dozie, 2005). The way mothers talk about their newborns during the first week of life can have a lasting impact on adult attachment styles. If mothers viewed their babies as responsive and lively, their adult children tended to develop secure and trusting attachment styles. Conversely, if mothers perceived less positivity in their newborns' personalities, their adult offspring were more likely to experience feelings of insecurity (Broussard and Cassidy, 2010). An interesting connection was found between emotions, thinking abilities, and self-awareness in infants whose mothers experienced depression. Negativity on the mother's end can impact a child's self perception. (Cicchetti et al., 1997). Attachment dynamics are influenced by the child's gender, particularly in relationships between mothers and sons, and fathers and daughters. Mothers may exhibit greater sensitivity towards their daughters compared to fathers, and vice versa. Accurate comprehension necessitates an appreciation of the intricate relational dynamics between father-infant and mother-infant couples (van Ijzendoorn and De Wolff, 1997). A mother's self-perception profoundly impacts her self-worth, as evidenced by the robust correlation between maternal self-concept and overall self-esteem. A positive childbirth experience bolsters a mother's self-esteem and fortifies the mother-child bond (Gardner, 1978). During early infancy, a child's sense of security is predominantly shaped by external cues, such as the presence and responsiveness of their caregiver. Children build internal conceptualizations of these connections through repeated interactions, which helps to regulate fundamental systems.

Parent’s Perception of Child

In order to understand the inherent complexity of early development, it is crucial to explore the influence of parental attitudes on infant self-concept. Research based on empirical evidence has revealed significant changes in parental evaluations of their offspring within the first month postpartum. It is noteworthy that maternal and paternal emotions towards newborn infants are more favorable within the first three days postpartum compared to one month later. It is interesting to note that, after a month postpartum, fathers and mothers evaluate male and female children differently, indicating the delicate interactions of many variables affecting parental opinions (Hernández-Martínez et al., 2011). Infants' display of emotional expressions plays a key role in their developmental process, serving as their primary mode of communication until speech emerges. Parental sensitivity to infant emotions is evidenced in their precise responses on both the imitation procedure and subjective statement levels (Sander, 1965).

Studies show that parents' physiological reactivity to their own offspring's emotional responses is higher than that of unfamiliar newborns. Value-specific patterns can be seen in parental responses in imitation techniques as well as subjective remarks. Moreover, parents may have long-term consequences from attending to their newborns' discomfort in the

Neonatal Intensive Care Unit (NICU). Developing effective interventions and support systems to foster positive parent-infant dynamic relationships requires a comprehensive understanding of the multifaceted nature of these relationships (Wiesenfeld & Klorman, 1978; Wiesenfeld et al., 1981).

Three years post-discharge, mothers reported that witnessing their infants in pain was the most distressing aspect of their NICU experience. These findings underscore the importance of early parental involvement in collaborative medical work to address infant pain management issues and strengthen parent-child relationships (Franck et al., 2005). Mothers' initial self-awareness of parental responsibilities significantly influences their connection with infants, including their self-evaluation as parents, their impact on infants, and their satisfaction in child-rearing (Mercer, 1986).

Offspring of mothers with emotional disorders exhibit higher tendencies towards insecure attachment, as confirmed by research results. These findings highlight the critical role of attachment in the evolutionary process, which is essential for the continuation of the species (Gaensbauer et al., 1984). Finally, it was found that mothers' attitudes towards paternal responsibilities influence fathers' self-perception of parenting and the correlation between them and their children's interactions. This emphasizes the importance of understanding the dynamic of parental relationships and their impact on parenting roles (McBride et al., 2005).

Reciprocal Social Interactions

Synchronic Imitation

Neonates copy many behaviors that are observed by them which other people do. This communicates multiple concepts and points out that neonates can use the observed actions of people to invent their own matching acts. Through imitation, they learn different skills, techniques and cultural practices. Infants don’t rely on external reward or punishment mechanisms that influence their actions. On the contrary, Neonates of humans are more advanced and precise imitators than any infants of any other species. Neonates conventionally look forward to other people’s reactions or emotional cognitions to their actions (Marshall & Meltzoff, 2014).

The development of imitation happens in 6 stages, ending within 18-24 months along with 3 crucial changes. The study presented that an infant has the ability to make an imaginative representation of a model’s behavior at the time of action and can remember or recollect that particular image, followed by a recall interval (Barr et al., 1996). According to the mirror neuron hypothesis, an individual's action program determines how they interpret every action they see, allowing them to comprehend other people's acts as though they were carrying them out themselves (Simpson et al., 2014). The pioneer of synchronization is observed in the first hours of birth, which indicates that human beings are naturally prepared to participate in harmonized interactions. Mothers use societal happenings to supplement the alertness of neonates. It was observed that when mothers engaged in vocal stimulations, 65% of the neonates’ observation was increased or amplified during the second half of 15 minutes based on the mother's ability

to coordinate in the first half. Neonates oftentimes experience collaborative mismanagement, but it is typically repaired almost immediately (Feldman, 2007).

Communication

Infants can distinguish themselves from others from the preliminary stage and communicate with others based on common understanding. The use of sound and motion simultaneously by infants allows them to better distinguish between themselves and the environment. This synchronization is thought to be important, and it stresses the eminence of engaging in amusing activity in self-development. The adult's capacity to remember the child's developing self-validates it (McCluskey & Duerden, 1993).

The focal point of the neonate is on the companionship of the grown-up as a reference of authentic knowledge about the society. Infants assimilate to discriminate the intramural basis of physiological and instinctual stimulation that guide to dissimilar feelings during the scrutinization of their guardians' facial or vocal mirroring responses to different situations (Fonagy et al., 2007).

Neonatal attachment behavior develops in response to the mother's security and responsiveness, which relies on her capacity to accurately deduce the infant's emotional cues, which are mostly conveyed through effective facial display. Since newborns are capable of imitation from the earliest stages of life, reciprocal imitation between mother and child is a widely encompassing behavior that promotes dyadic interactive exchanges (Lenzi et al., 2008). Neonatals exhibit an innate drive to relate to others around them, in addition to mimicking and thinking like themselves from birth. An infant's interpersonal self develops through the flexible process of multimodal perception and evaluation in a particular sensory-motor activity. Infants born just under an hour ago are capable of mimicking facial expressions like lip elevation, mouth opening, and tongue protrusion (Decety & Chaminade, 2003). Around 4.5 months of age, newborns are able to recognize names and use them as an auditory cue about who they are. From this age on, babies will explicitly turn their heads in response to hearing their name said, indicating that they understand it to be a verb. Babies hear their names called on a frequent basis, usually by their primary caregiver, such as moms. These familiar voices may have a significant impact on how early social cues about oneself are processed (Imafuku et al., 2014).

Interaction with the environment

Infants start to establish the unexpressed self-awareness from the moment of they were born. Engaging in introspection, self-initiated behaviours, and interactions with their immediate environment, they contribute to forming two specific types of implicit self-awareness which are social and perceptual. Evidently, language acquisition and explicit self-perception operate independently despite sharing a temporal correlation. The importance of language learning in terms of making it easier to comprehend one's own intentions as well as those of others. (Tomasello & Akhtar, 1995).

Newborns in Physical existence, cultivate an understanding of their material existence in the world around them, which is a concept known as "the ecological self." The essential nature

of infants is highlighted by distinguishing between self-generated and external stimuli, which indicates early perceptual discrimination. This highly reinforces the idea that behavior, selfhood, and the environment create a system that is interconnected and influences an infant's posture and behaviors. This viewpoint has been reflected in the work of Neisser (1991) and Rochat (1998).

By the midpoint of their second year, infants display indications of self-awareness, signifying a cognitive recognition of their public persona and an awareness of how they might be perceived by others. Temperament, defined as a biologically rooted behavioral disposition, delineates an individual's interactions with their surroundings, emphasizing the inherent attributes of temperament distinct from behavioral characteristics and drives (Compas, 1987; McClowry, 1992; Prior, 1992). Fundamentally the concepts of social adeptness and self-regard are different. Social adeptness refers to interpersonal behaviors, while self-regard relates to emotions and motivations. Infants develop a subconscious self-image in infancy through sensory experiences and interpretations (Fullard et al., 1984).

Social encounters that are negative lead to a shift in the structure of the brain structure, as well as functions, and the long-lasting impact of early environmental conditions has been seen. in maternal care emphasizing the interaction between genetic tendencies and environmental factors in shaping an individual's characteristics over their lifetime. This thorough analysis outlines the complex developmental paths that connect environmental and social influences to infants' self-perception (Meaney, 2010).

Cognitive Development

It is believed infants rely heavily on cognitive development due to their self-concept being a cognitive representation of the self. The focus is usually on the infant as an agent to its surroundings, not just an object, thereby showing implicit sense of self. Particularly Neisser (1991) has done a great deal of research comparing the ecological self and interpersonal self. Saxe and Butterworth, who concentrated on the mental mapping of the child and their autonomy within the environment, respectively, have also researched the ecological self. The Mirror Self-Recognition Task, developed by Gallup in 1970, had been, of course, the most widely used technique for researching the ecological self.

According to the study by Bertenthal and Fisher (1978), babies as young as six months old can distinguish changes in their faces, and by the time they are ten months old, they can do this considerably more effectively. Additionally, Filippetti and Tsakiris (2018) discovered that neonates, as opposed to distinct random faces, are more likely to desire to see themselves in pictures when they are around 18 months old, which puts it directly in contrast to previous research by Bahrick (1996) and Rochat (2002) that found that infants wanted to observe unique faces as compared to their own. Thus, it can be inferred that the onset of self-recognition resulted in the infants wanting to see more of themselves, whereas in the past they preferred the unfamiliar. In response to the overwhelming criticism of the experiment regarding the necessity of testing recognition through mirrors, Bahrick conducted the study using images

instead of mirrors. What he discovered was that infants as young as 3 months old could distinguish among the images, and by the time they were 5 to 8 months old, they were even demonstrating a preference for the image of their peer. According to this, a baby's self-concept begins to form in the first six months of life, rather than the middle of the second year as suggested by earlier research.

Rochat and Striano (2002) also studied the evocative effect on infants, showing that it results in a higher development of self-image, and, by extension, self-concept. Courage (2002) also reaffirmed this result through his findings explaining why facial self-recognition doesn't occur at 18 months old. The body was more important to the child in the context of exploration as compared to the face. This view was challenged by Bahrick and Rochat, who found that the infant was fully capable of differentiating between self and other through their studies of body parts. When studied in children with Down syndrome, lower levels of self-concept and self-recognition were found by Mans (1978). This was similar to another study in Lewis (2012), which also studied it in mentally retarded children and found a similar result.

Thus, it could be inferred that those who have lower levels of cognitive development lack self-recognition and, therefore by extension, self-concept. The interpersonal self was also the subject of much research; Schaffer (1984) and Butterworth (1991) demonstrated how the formation of self-recognition in the child is a result of the processes of joint attention and social interaction. This was further backed by a study by Sigman (1986), which found a lack of these behaviours as well as self-concept development within autistic infants. Therefore, cognitive developmental delays may be a significant factor in the delayed emergence of a self-concept.

Sensory Perception

The study of senses and their impact on the infant from the prenatal stage has also been extensively studied. Touch is vital to the infant's learning of the environment and recognition of objects. A study by Purpura (2023) found that the absence of their mother's touch in infants resulted in significantly lower social emotions, motor balance systems, and sleep schedules. Those who felt touch developed much faster, thereby underscoring its importance. Vision was also studied as a sense by Bahrick and Watson (1985), who found that self-perception was inherently dependent on bodily movement and sight. This was further backed by Schmuckler and Jewell (2007), who found a correlation between self-perception and visual proprioception. Thus, the infants were able to connect their visual and motor systems into a single, unified concept. This allowed them to differentiate self from others and see themselves as causal agents in a more ecological perspective. Thus, this makes them capable of objectifying themselves, according to Rochat, tying into self-recognition in mirrors at around 2 years of age.

Posture has also been prominently studied as a sensation by Lee and Aronson (1974), who found that changing the environment around the infant changed the optical flow of the infant and, by extension, the posture and proprioception of the infant. (Jouen et al., 2000) also found similar results when studying peripheral vision in 3-month-old infants, which found that peripheral vision aided more in posture stabilization than central vision. Bertenthal (1989) also

studied the phenomenon and found that while both 7- and 9-month-olds were capable of compensating for whole-room movement, only the 9-month-olds were able to compensate for side-wall movement. This is likely due to the development of sensory perception and understanding of self. This is further supported by a study by Jouen et al. (2000), which observed backward posture when given backward optical flow.

DISCUSSION

This study was conducted with the intention of furthering the understanding of factors influencing self-concept in the development of infants, since even though it was a widely researched topic in the late 20th century, there has been a significant knowledge gap since then. Parental sensitivity to the emotions of an infant is imperative, since maternal and paternal emotions towards infants are more favorable within the first three days postpartum compared to one month later. It has also been found that mother's approach towards parental responsibilities has influenced father's self-perception of parenting. The ability of a newborn to distinguish between oneself and other people depends heavily on communication. All the papers show that infants start imitating from birth, which helps them understand better that they are separate beings. The combination of communication and imitation commences the process of development of self in an infant. Studies have shown that parenting style significantly impacts the development of self-concept in infants. Positive interactions between parents and children are crucial in shaping a child's view of themselves. Cultural and socioeconomic variables also affect these dynamics. An infant's self concept is shaped by family symphony as well. Loving and supportive environments can help children form positive self-concepts during their formative years.

Newborns bond with caregivers during the first two years of their life, which helps them build a secure attachment style for the next couple of years. Early childhood trauma for up to three months can trigger traumatic stress response. Attachment dynamics could also be influenced by the gender of an infant. Mothers may exhibit greater sensitivity towards their daughters in comparison to their fathers, and vice-versa.

Newborns that had a strong bond with their moms were better able to comprehend and express their feelings. However, those who were not securely attached to their mothers found it challenging to communicate their emotions and were also not able to interpret other's emotions. The way mothers perceive their children may also affect them and, in some cases, may imbibe feelings of insecurity in them.

The majority of the papers reviewed focused on cognitive development as a way of measuring self-concept. Most of the researchers focused on the Mirror Self-Recognition Task to study this, and have found significant differences between a younger and older infant in terms of their self-recognition. Studies on infants with Down syndrome and autism also indicate the importance of cognitive development, due to their reduced self-recognition compared to a

normal infant. Overall, the cognitive development of an infant significantly influences their self-concept development.

Infants start to establish unexpressed self-awareness from the moment they are born. Two different types of self-awareness begin to develop: social and perceptual. By the midpoint of their second year, infants display indications of self-awareness, signifying a cognitive recognition of their public persona and an awareness of how they might be perceived by others. In their physical existence, newborns cultivate an understanding of their physical presence in relation to the world around them, a concept known as "the ecological self."

Papers on sensory perception mainly focused on the importance of an infant's senses in building their self-concept. They've found touch and vision to be significant towards an infant's self-perception. diverse factors like parental caregiving, socioeconomic effects, and genetic predisposition of p Posture has also been extensively studied, and has been found to increase with age, showing heightened self-perception over time. Through the evaluation of parents, participants desire to investigate the complexity of developmental phases from numerous perspectives.

This thorough analysis captures a variety of parental viewpoints and their significant influence on newborns' self-concepts. Every element that adds to our knowledge of early development, from the changing perceptions of neonates to the complex emotional dance in parent-infant relationships, is noteworthy. Developing successful interventions and support networks that foster positive parent-infant dynamics requires an understanding of the multifaceted nature of these relationships.

Limitations

The limitations noted in our papers include our inability to research major topics such as Socioeconomic status of parent, Parental mental health and the Genetic Predisposition of Parents due to a lack of quantifiable evidence on the topics. We were also unable to use a database algorithm for our preliminary search and methodology, and as a result, we have been unable to sort papers automatically, due to which some papers may not be included in our research. Another limitation is the absence of papers written in languages other than English, due to the lack of any credible translation software that could be used by the team.

Future Research Directions

Conducting empirical research along with a quantitative method could provide numerical data to understand several factors and development of self-concept of an infant. Geographical and cultural contexts can highly influence an infant's self-concept. Further study also has to be undertaken in the fields of parental touch and imitation to create more well-defined findings on the topic of self-concept. Quantitative research conducted on the theoretical concepts of sensations, specifically those of smell and taste, and its impact on the emergence of self-concept also need to be researched further. The topics socioeconomic status of parents, parental mental health, and genetic predisposition of parents can also be explored further in literature reviews.

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APPENDIX

SR NO.	Author and Year	Title	Theme	Topic of interest	Results
1.	Rohmalimna, A. 2022	The Role of Parental Parenting in the formation of child's self concept	Caregivers / Parents	The Role of Parenting in the Development of a Child's Self Concept	It discusses the stages of self-concept formation, highlighting the primary self-concept's dependence on parental interaction and the family environment. The study also delves into different parenting styles, including authoritarian, democratic, and permissive parenting, and their respective impacts on a child's self-concept.
2.	Doyle, A. B 2000	Child Attachment Security and Self-Concept: Associations with Mother and Father Attachment Style and Marital Quality.	Caregivers / Parents	This paper looks at relationship between child attachment security and self-concept, and how it is associated with mother and father attachment styles, as well as marital quality	According to the study, a couple's marital harmony and the attachment styles of their parents have a significant impact on how secure their children feel about themselves. Children of securely attached parents typically had healthier attachments, which had a positive impact on the child's self-concept.
3.	Babbar, M. S., & Dhankar, C. (2021)	The Relationship between Parenting Style and Child's Self-concept	Caregivers / Parents	Relationship between parenting styles and a child's self concept	According to the study, children who experience authoritative parenting—which is defined by warmth and realistic expectations—have an improved self-concept. Authoritarian parenting, high on control and low on warmth, showed a potential negative impact on a child's self-esteem. Additionally, permissive parenting, with its lenient approach, may lead to challenges in self-regulation and decision-making. The findings highlight how parenting style has a big impact on a child's sense of identity.
4.	Brown, G. L., Mangelsdorf, S. C., Neff, C., Schoppe-Sullivan, S. J., & Frosch, C. A. (2009)	Young Children's Self-Concepts: Associations with Child Temperament, Mothers' and Fathers' Parenting, and Triadic Family Interaction	Caregivers / Parents	relationship between young children's self-concepts and various factors, including temperament of the child, parenting styles of mothers and fathers, and triadic family dynamics.	The findings suggest that child temperament, along with the parenting styles of both mothers and fathers, as well as family interaction dynamics, collectively contribute to shaping young children's self-concepts. Understanding these associations can provide valuable insights into child development and familial influences on self-perception.
5.	Ata, S., & Yağan Güder, S (2020).	Parents' attachment to their children and their level of interest in them in predicting children's self-concepts	Caregivers / Parents	Parents' degree of interest in and attachment to their kids displays a predictive effect on kids' self-concepts.	Children's self-concepts are highly influenced by parents' bond to and their interest in their offspring, according to the study. A strong correlation was found between positive parental attachment and children's healthy self-concepts. Thus healthy self-concepts among children were linked to high levels of parental interest in them.
6.	Laible, D. J., & Thompson, R. A. (1998).	Attachment and emotional understanding in preschool children.	Caregivers / Parents	The association between preschoolers' emotional	The study found a strong link between preschoolers' sophisticated emotional awareness and safe bonding. Children with secure attachments exhibited greater emotional

				comprehension and attachment.	comprehension. In contrast, insecurely attached children showed less developed emotional understanding. These results highlight the connection between preschool-aged children's initial experiences of attachment and their emotional growth.
7.	Ackerman, J. P., & Dozier, M. (2005)	Influence of foster parent investment on children's self and attachment figures	Caregivers / Parents	influence of foster parent investment on children's representations of self and attachment figures.	The study discovered a correlation between children's more positive self-representations and higher degrees of foster parent engagement. Additionally, greater investment was associated with more secure attachments to figures. Children in foster care developed greater attachment bonds and had higher self-esteem as a result of the foster parents' ongoing support.
8.	Cicchetti, D., Rogosch, F. A., Toth, S. L., & Spagnola, M. (1997)	Affect, cognition, and the emergence of self-knowledge in the toddler offspring of depressed mothers	Caregivers / Parents	Early children's development of self-awareness is influenced by maternal depression,	According to the study, self-awareness in infants of depressed mothers emerged later in life. It emphasized how maternal depression affects children's early self-knowledge formation.
9.	Keller, H., Kärtner, J., Borke, J., Yovsi, R., & Kleis, A. (2005)	Parenting styles and the development of the categorical self: A longitudinal study on mirror self-recognition in Cameroonian Nso and German families	Caregiver/ parents	The evolution of the categorical self and parenting approaches, with a focus on mirror self-recognition in German and Cameroonian households throughout time.	The research revealed that parenting styles and cultural differences significantly impact the development of mirror self-recognition in children. Cameroonian Nso children demonstrated delayed self-recognition compared to German children. The study highlighted how parenting practices and cultural contexts contribute to the emergence of the categorical self in early childhood
10.	Paulus, M., Licata, M., Gniewosz, B., & Sodian, B. (2018)	The impact of mother-child interaction quality and cognitive abilities on children's self-concept and self-esteem	Caregivers / Parents	Influence of mother-child relationship quality and cognitive capacities on children's perceptions of themselves and self-worth.	The study found that children's cognitive capacity and the quality of mother-child interactions both have an enormous effect on children's perceptions of themselves and their self-worth. Positive mother-child interaction quality correlated with higher self-esteem and a more positive self-concept in children. Children with stronger cognitive abilities tended to exhibit more positive self-concepts and higher self-esteem.
11.	Broussard, E. R., & Cassidy, J. (2010)	Maternal perception of newborns predicts attachment organization in middle adulthood	Caregivers /Parents	Long-term effects of a mother's impression of her newborn on the child's attachment structure in middle age.	The study's conclusions point to a strong correlation between a mother's impression of her child and that child's attachment structure when they reach middle adulthood, emphasizing the enduring impact of early maternal perceptions on long-term attachment outcomes.
12.	McCluskey, U., & Duerden, S. (1993)	Pre-verbal communication: The role of play in establishing rhythms of communication between self and other	Communic ation	Attunement between mothers and infants	Preverbal playful rhythms promote infant's sense of self. Gives special attention to Daniel Stern's notion of "attunement" observing the inner emotional states of mothers and their newborns, rather than focusing specifically on nonverbal communication. Attunement between infant and guardian or mother enables the infant to explore the self.
13.	Lenzi, D.,	Neural Basis of	Communic	The imitation of	Positive emotions like happiness are highly

	Trentini, C., Pantano, P., Macaluso, E., Iacoboni, M., Lenzi, G. L., & Ammaniti, M. (2008)	Maternal Communication and Emotional Expression Processing during Infant Preverbal Stage.	ation	the mother to the infant's facial expressions and her ability to understand the neonate, affects its development of self	activated when imitated, whereas cryptic or ambiguous expressions activate the left hemisphere, which is involved in higher cognition and motor control.
14.	Decety, J., & Chaminade, T. (2003)	When the self represents the other: A new cognitive neuroscience view on psychological identification.	Communic ation	The development of the knowledge of other minds is deeply ingrained in the self that others are similar to it	Relationships with people and our sense of agency are significantly influenced by the parietal and prefrontal cortex. We have the ability to represent both the self and other's thoughts which may indicate that they are interrelated or interwoven together and may have similar origin in the brain.
15.	Imafuku, M., Hakuno, Y., Uchida-Ota, M., Yamamoto, J., & Minagawa, Y. (2014).	Behavioural and prefrontal responses of infants to self-names spoken by their mothers	Communic ation	Investigation of the effect of mothers calling out their infants and the ability to recognize social signals.	It can be concluded that the dorsomedial prefrontal cortex of 6-month-old newborns is more receptive to their own names and the speech of their mothers than it is to the voices and names of any other outsider, and that this is a precursor to self-reflexing encouraged by a voice they recognize.
16.	Marshall, P., & Meltzoff, A. N. (2014)	Neural mirroring mechanisms and imitation in human infants	Synchronic Imitation	The ability of neonates to understand the similarity between the actions performed by the self and others.	First-hand experiences affect the neural responses in neonates while observing others. Collaborative experiences with others have shown significant positive affect on neonates imitation and understanding.
17.	Simpson, E. A., Murray, L., Paukner, A., & Ferrari, P. F. (2014)	The mirror neuron system as revealed through neonatal imitation: presence from birth, predictive power and evidence of plasticity	Synchronic Imitation	Infants can imitate behaviours not yet perceived by them and that it is influenced by the first week of life's occurrences.	Other evaluations have come to the conclusion that mirror imitation is not a real occurrence after evaluating the complete account of procedural elements and statistics, however research shows there is a connection between the same motor reactions and the visual processing of facial movements before any experience..
18.	Gallagher, S., & Meltzoff, A. N. (1996)	The earliest sense of self and others: Merleau-Ponty and recent developmental studies	Synchronic Imitation	Re-examination of the issues in understanding self and others with regard to the latest research and development studies. The traditional assumptions of Merleau-Ponty is revisited and challenges it.	Merleau-Ponty's conception of what infants are capable of is based on the traditional assumptions that experience is the stepping stone for body schema needs a revision. The connection between self and others is effective since birth and is not syncretic like Merleau believed.
19.	Feldman, R. (2007)	Parent–Infant synchrony	Synchronic Imitation	Interpersonal relationship of mother-infant interaction.	The parameters of synchrony are sensitive to developmental risks. The emergence of self from the mother is a complex process with the combination of various physiological processes and social behaviours. Further work needs to be done on the synchrony of the developing brain.

20.	Butterworth, G. (1992)	Origins of Self-Perception in Infancy	Cognitive Development	Definition of self-concept and self-perception	Self-concept is heavily influenced by cognitive development of the infant, due to the concept being a cognitive representation of the self.
21.	Rochat, P., Morgan, R., & Carpenter, M. (1997)	Young infants' sensitivity to movement information specifying social causality	Cognitive Development	Agency of the child and their relation to the environment	The infant is not just an object to its surroundings, but rather an agent that acts in response to stimulation.
22.	Gibson, J. J. (1979)	The Ecological Approach to Visual Perception: Classic Edition	Cognitive Development	Agency of the child and their perception of the environment	For any perception and action of the environment to take place, it is necessary for the infant to perceive themselves too. Thus implicit self-knowledge comes into being much beyond explicit self-knowledge.
23.	Neisser, U. (1991)	Two perceptually given aspects of the self and their development	Cognitive Development	Division of implicit sense of self	It has two kinds: the interpersonal self (the self in connection to other individuals) and the ecological self (the self in respect to physical environment). While the interpersonal self grows through social interactions with others, the ecological self grows through interaction with physical objects and self-exploration of the body.
24.	Saxe, A. M. (2013, December 20).	Exact solutions to the nonlinear dynamics of learning in deep linear neural networks	Cognitive Development	"Mapping" of intuitive processes within infants	What starts off as a simple observation, i.e. they are looking at that, can lead to a more complex mapping, i.e. their goals and attributions behind looking over there.
25.	Gallup, G. G. (1970).	Chimpanzees: Self-Recognition	Cognitive Development	Mirror Self-Recognition Task	The most popular technique for researching self-concept is the Gallup-created "Mirror Self-Recognition Task," in which a baby's ability to identify photographs of themselves indicates growth in self-concept development.
26.	Bertenthal, B. (1978).	Development of self-recognition in the infant.	Cognitive Development	Mirror Self-Recognition Task	Even six months old babies are able to distinguish distinctions between their face and the picture, with this number increasing as the infants grow to 10 months. At 15 months, the infants are capable of removing the mark from their faces just through observation of the images, showcasing the impact of cognitive development on self-recognition.
27.	Filippetti, M. L., & Tsakiris, M. (2018).	Just before I recognize myself: the role of featural and multisensory cues leading up to explicit mirror Self-Recognition.	Cognitive Development	Mirror Self-Recognition Task	Infants around the age of 18 months are more likely to want to observe their own facial features in a mirror than that of an unknown infant. The fact that self-recognition has emerged thus far indicates that they would prefer to see themselves.
28.	Bahrick, L. E. (1996).	Development of visual Self-Recognition in infancy.	Cognitive Development	Mirror Self-Recognition Task	Development of self-recognition occurs much before the other studies show (which is about 15 to 20 months old). She in her study using visual recognition of images of the infant and a peer, showed that the infant is able to discriminate between the images at 3 months old, and by 5 to 8 months, they are fully capable of discrimination between the faces, even expressing a liking for the peer's face.
29.	Rochat, P., & Striano, T.	Who's in the mirror? Self-other	Cognitive Developm	Mirror Self-Recognition Task	Infants tend to show the evocative effect as well, responding to the emotions of the images in

	(2002).	discrimination in specular images by four- and nine-month-old infants.	ent		these experiments by mimicking them. This can also be assumed to be a method of development of self-concept, since it shows that infants by the age of 3-4 months have a basic understanding of their body image, in order to be responding to stimuli in this manner.
30.	Courage, M. L., & Howe, M. L. (2002).	From infant to child: The dynamics of cognitive change in the second year of life.	Cognitive Development	Mirror Self-Recognition Task	Trying to explain the failure of infants in recognizing themselves in the mirror at 18 months old, Courage states that the face just isn't considered to be an important part of the ecological self yet, and yet the infants doesnt make an effort to recognize it.
31.	Mans, L., Cicchetti, D., & Sroufe, L. A. (1978).	Mirror Reactions of Down's Syndrome Infants and Toddlers: Cognitive Underpinnings of Self-Recognition.	Cognitive Development	Mirror Self-Recognition Task	In the case of children with Down Syndrome, it was found that they were unable to remove the mark from their faces until the ages of 3-4, whereas an average infant was capable of doing it at 15 months old.
32.	Lewis, M. (2012).	The child and its family.	Cognitive Development	Mirror Self-Recognition Task	Research on mentally retarded children having mental age ranging from 0.75-3.33 years old, with their chronological age ranging from 4-19 years old, showed that they were exposed to mirrors but no evidence of self-recognition could be found.
33.	Schaffer, H. R. (1984).	The child's entry into a social world.	Cognitive Development	Social Interaction and Interpersonal Self	Infants learn from their social interaction with their environment and the adults in their social surroundings.
34.	Butterworth, G., & Jarrett, N. (1991).	What minds have in common is space: Spatial mechanisms serving joint visual attention in infancy.	Cognitive Development	Joint Attention	Around the age of one year old, infants exhibit a phenomena called "joint attention," in which they tend to stare in the same direction as other people. They also start to use behavioural cues from others to form their own behavior, while also seeking to influence the other's behaviour, such as their direction of gaze.
35.	Sigman, M. D., Cohen, S. E., Beckwith, L., & Parmelee, A. H. (1986).	Infant attention in relation to intellectual abilities in childhood.	Cognitive Development	Joint Attention and Pretend Play	This behaviour is not seen in autistic children, who tend to neither show joint attention nor social pretend play, a type of behaviour that emerges at around 2 years of age in infants.
36.	Aral, N., & Sağlam, M. (2016).	Sensory development in infants.	Sensory Perception	Development of Senses and Impact on Self-Concept	The development of senses is very important towards the infant's perception of their surroundings. This development starts in the prenatal period and continues into infancy and childhood. Even if not fully developed by birth, they continue to function. Thus an infant's ability to use their senses and benefit from it directly affects the learning and development of a child's self-concept and learning
37.	Rochat, P., Blass, E. M., & Hoffmeyer, L. B. (1988).	Oropharyngeal control of hand-mouth coordination in newborn infants.	Sensory Perception	Sensory Touch	Infants are more likely to want to touch their faces and mouth for self-exploration
38.	Purpura, G., Fumagalli, S., Nacinovich, R., Riva, A., Ornaghi, S.,	Effects of social and sensory deprivation in newborns: A lesson from the Covid-19 experience.	Sensory Perception	Sensory Touch	The absence of touch affects the development of infants. It did this by taking the scenario of mothers who had Covid, and therefore were unable to touch their children. It found that around the age of 7-8 weeks, showed differences

	Serafini, M., & Nespoli, A. (2023b).				from the control group in their ability to control their social emotions, motor balance systems and sleep schedules. Another conclusion found was that those in the control group developed faster in terms of visual acuity as compared to the Covid group, thereby underlining the importance of touch towards development of self.
39.	Bahrick, L. E., & Watson, J. S. (1985).	Detection of intermodal proprioceptive–visual contingency as a potential basis of self-perception in infancy.	Sensory Perception	Sensory Vision	When presented with two films, infants should be able to distinguish between their own leg motions, or proprioception. Researchers came to the conclusion that a newborn's ability to see themselves is greatly influenced by their ability to identify a visual consistency between their movement and visual experience, and that proprioceptive-visual coherence was achieved by the time the infant was 5 months old.
40.	Schmuckler, M. A., & Jewell, D. T. (2007).	Infants' visual-proprioceptive intermodal perception with imperfect contingency information.	Sensory Perception	Proprioception and Optical Flow	There was a correlation between self-perception and visual proprioceptive inputs, even if that connection was severely degraded. This showed that infants were able to connect the visual and motor systems into a single unified concept. This, as theorised by the author, meant that this correlation could be a powerful tool towards self-recognition and differentiation from others. This allowed the infants to see themselves as causal agents, in a more ecological perspective. Additionally, it was successfully established that babies can distinguish between visual and proprioceptive information as early as three months of age. The result of their study showed that these infants would watch a TV view of their legs because of the proprioceptive feedback, rather than the realization that it is their leg that is being shown.
41.	Lee, David & Aronson, Eric. (1974).	Visual proprioceptive control of standing in human infants	Sensory Perception	Proprioception and Optical Flow	They studied whether creating an effect of the room around the infant changing would induce changes in the posture of the infant. It found that the optical flow, or how the infant visually perceived the event, affected the posture of the infant, despite it not being capable of critically analysing which way the room is changing.
42.	Jouen, F., Lepecq, J.-C., Gapenne, O., & Bertenthal, B. I. (2000).	Optic flow sensitivity in neonates.	Sensory Perception	Peripheral Vision and Optical Flow	Research about peripheral vision in 3-month old infants was more important towards stabilisation of the body than central vision, as any changes in the peripheral vision resulted in complete loss of stability. Another studies also showed that while both 7-month olds and 9-month olds were likely to compensate for whole-room movement, only 9-month olds were able to compensate their posture for side wall movement, suggesting a development in sensory perception and understanding of self. This feature could also be seen in 3-day olds, wherein a backward optical flow would result in backward posture
43.	Balbernie, R. (2013)	The importance of secure attachment for	Caregivers/Parents	Secure attachment and neurobiological	Secure attachment during the initial two years of life will enhance the possibilities of the child

		infant mental health		development	developing a healthy sense of self, to understand and accept the feelings of other people, derive maximum benefit from schooling, and possess built-in psychological resilience that can be drawn upon under stress.
44.	Ding, Y., Xu, X., Wang, Z., Li, H., & Wang, W. (2014)	The relation of infant attachment to attachment and cognitive and behavioural outcomes in early childhood	Caregivers/Parents	Neonatal connection to attachment and results in terms of cognition and behavior	Attachment formation from early childhood through infancy is extremely consistent. Secure mother-infant attachment predicts better intellectual and behavioral outcomes, while insecure attachment, especially resistive attachment, could predict early age cognitive dysfunction and more behavioral problems.
45.	Fraley, R. C. (2002)	Attachment Stability From Infancy to Adulthood: Meta-Analysis and Dynamic Modeling of Developmental Mechanisms	Caregivers/Parents	Attachment Stability	For the first few months, a baby's primary sense of security is created by external cues such as responsiveness and being close to primary caretakers. Through repeated interactions, however, children develop an internal set of functioning models, or knowledge structures that reflect those interactions and allow the system to become regulated through self.
46.	Hernández-Martínez, C., Canals Sans, J., & Fernández-Ballart, J. (2011)	Parents' perceptions of their neonates and their relation to infant development	Parents perception	Parents' perceptions of their neonates	This research aimed at discovering the manner in which perceptions of both father and mother influence their behavior towards the infant and through this, can be used as a marker for infantile growth. It indicated that although both parents' initial reaction concerning their infant was positive, then they decreased following the first month of life. Worse infantile perception followed a highly neurotic mother's perception, and a positive perception from the father was correlated to better neonatal development at 12 months.
47.	Spangler, G., Geserick, B., & Von Wahlert, A. (2005)	Parental Perception and Interpretation of Infant Emotions: Psychological and Physiological Processes	Parents perception	Emotions: Psychological and Physiological Processes	This paper explored how neonatal emotions are concerned with the feeling and perception of parents, and for this purpose, employed positive, negative, and neutral emotions on the infant's face. While they could correctly identify the feelings and used a response toward them, the parents were considerably skewed in favor of positive emotions. All infant pictures, including those with negative emotions, led to a reduction in the startle reflex, thereby proving that there is a correlation between pictures of infants and the processing of information in parents.
48.	Pridham, K. F., Chang, A. S., & Chiu, Y. (1994)	Mothers' Parenting Self- Appraisals : The Contribution of Perceived Infant Temperament	Parents perception	Mothers' Parenting Self- Appraisals	This paper tried to examine the interaction between a mother's perception of her parenting style and infant temperament. The postpartum period in the first 3 months was used within the study as it further followed the mothers and found variance in both evaluation and problem-solving capabilities in parents, which indicates that mothers in particular are more sensitive towards the change in the temperament of their baby with age.

49.	Schoppe-Sullivan, S. J., Brown, G. L., Cannon, E., Mangelsdorf, S. C., & Sokolowski, M. S. (2008)	Maternal Gatekeeping, Coparenting Quality, and Fathering Behavior in Families With Infants	Parents perception	Maternal Gatekeeping, Coparenting Quality, Fathering Behaviour	The study suggests that the combination of a supportive coparenting relationship and an encouraging partner is one in which involved, competent fathering behavior is likely. However, they also found that notwithstanding coparenting quality, low levels of maternal encouragement appeared to be related to relatively high levels of observed involvement and competence. Moreover, when coparenting quality was low, fathers were less involved and less competent when mothers were more encouraging.
50.	Franck, L. S., Allen, A., Cox, S., & Winter, I. (2005).	Parents' Views About Infant Pain in Neonatal Intensive Care	Parents Perception	Neonatal Intensive Care	The majority of parents requested greater information and involvement in their child's care since they believed that medical procedures significantly increased their newborns' suffering. In addition, the emotional distress these babies experienced made the parents anxious about their future relationship with the child.
51.	Eder, R. A., & Mangelsdorf, S. C. (1997).	The emotional basis of early personality development	Parents Perception	Early Personality Development	Infantile attachment of parents is signficantly influenced by their inherent personality. Mothers diagnosed with affective disorders are more likely to raise children with insecure attachment styles. Similarly, the maturity, interpersonal affection, ego strength and complex thinking of the mother were important predictors of secure attachment in infants.
52.	Schoppe-Sullivan, S. J., Diener, M. L., Mangelsdorf, S. C., Brown, G. L., McHale, J. L., & Frosch, C. A. (2006).	Attachment and Sensitivity in Family Context: The Roles of Parent and Infant Gender	Caregiver/Parents	Roles of Parent and Infant Gender	Parental sensitivity towards their infant depending on the gender of the child, with both mothers and fathers being equally sensitive towards a male infant, but fathers severely falling behind for female infants. In contrast, daughters had equal attachment security to both their parents, but sons had more attachment towards their fathers if the mother had an insecure relationship with the male infant.
53.	Chen, C., & Conrad, B. (2001)	The Relationship Between Maternal Self-Esteem and Maternal Attachment in Mothers of Hospitalized Premature Infants.	Caregiver/Parent	Maternal Self-esteem and Maternal Attachment	The maternal bonding and self-esteem of mothers of preterm delivered hospitalized infants were examined. Maternal self-esteem was frequently associated with the mother's intrinsic self-esteem, indicating that a mother's positive self-concept enabled her to be a more self-assured mother. Furthermore, the mother's self-esteem may also be impacted by any health issues with the baby and her past experiences with children.
54.	Bremner, G., & Fogel, A. (Eds.). (2004).	Blackwell Handbook of Infant Development	Interaction with Environment	Infant Development	Although they happen simultaneously during a child's development, language and explicit self-awareness are separate processes. According to current knowledge, a child's capacity to learn language and understand word meanings depends on their self-awareness as intentional beings. Infants make associations between new words and certain things or occasions in their environment when they come across them. Through this process, they are able to communicate about

					different aspects of their surroundings and match their objectives with those of others. According to research, children are intentional communicators who exhibit a clear awareness of both themselves and others.