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The early childhood teacher's pastoral role in supporting parents of traumatised children: A neuroscientific perspective

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Childhood trauma as a consequence of complex social challenges is prevalent in South Africa. The pastoral role of the early childhood development (ECD) teacher includes the support of parents with children who have suffered trauma, to promote the well-being of both the child and the parent. Underpinned by the framework of Maslow's hierarchy of needs, a systematic literature review was conducted to investigate the contribution of neuroscientific theory to understanding the scope and the effects of childhood trauma to devise evidence-based parental support strategies for ECD teachers. Using a hermeneutic inquiry methodology, 4 key topics identified through the literature review were analysed: understanding trauma and its impact on children; the neurobiological effects of trauma on brain development; the ECD teacher's pastoral role in supporting parents with traumatised children; and neuroscientific perspectives on parental support for traumatised children. The study provides insights into how various forms and causes of trauma intersect with their neurobiological impacts on children, and how ECD teachers' pastoral roles may be leveraged to support recovery. This understanding led to the development of practical strategies for teachers and parents that may significantly contribute to establishing a nurturing environment that promotes recovery and growth in children who have experienced trauma.

Keywords: brain development; childhood trauma; early childhood development (ECD); Maslow's hierarchy of needs; neuroscience; parental support; parents; South Africa; teachers' pastoral role

Introduction and Background

Early childhood development (ECD) establishes the groundwork for the physical, cognitive, emotional, and social growth of children during their formative years, which extend from birth to age 8 (Gordon & Brown, 2017; Republic of South Africa [RSA], 2015; United Nations Children's Fund [UNICEF], n.d.). Teachers who are well qualified are essential to the success of ECD programmes. One of the seven roles of a competent and certified ECD teacher in South Africa is to have clearly defined community, citizenship, and pastoral roles (Department of Education [DoE], RSA, 2000; Department of Higher Education and Training [DHET], RSA, 2011). Beyond academic supervision, the pastoral role encompasses a wide range of practical proficiencies. These include collaborating with parents and providing support, as well as promoting children's overall welfare, advancement, and holistic development (Ogina, 2010).

South Africa is characterised by a multifaceted past and societal challenges, including widespread childhood trauma, which has a substantial impact on the welfare and growth of young children (Rochat & Redinger, 2022). The persistent consequences of apartheid, including elevated levels of violence and poverty, family dysfunction, crime and the effects of the human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) and the coronavirus disease (COVID-19) pandemics, continue to create an environment in which children are vulnerable to experiencing various types of trauma (Byansi, Galvin, Chiwaye, Luvuno, Kim, Sundararajan, Tsai & Moolla, 2023). The seminal nationally representative study on child maltreatment in South Africa published in 2016 revealed that more than 40% of children had at some stage in their lives been subjected to sexual abuse, physical abuse, emotional abuse, or neglect (Saferspaces, 2023). In addition, Wits/Medical Research Council Developmental Pathways for Health Research Unit (DPHRU) conducted a national survey in 2022 which indicates that more than a quarter of adult South Africans have suffered early adverse childhood experiences (ACEs) or events of childhood trauma (Craig, Rochat, Naicker, Mapanga, Mtintsilana, Dlamini, Ware, Du Toit, Draper, Richter & Norris, 2022). Therefore, ECD teachers should understand the ramifications of trauma on children to support the parents of children with trauma and develop strategies that, in partnership with parents, effectively target the varied needs of traumatised children, foster their resilience, and cultivate a more promising future for them (Coleman & Wallinga, 1999).

Heckman, a Nobel laureate and economist, has demonstrated that the economic return on investment in pedagogic interventions during a child's early formative years is significantly higher than at any other stage. Early interventions that remediate the effects of adverse environments may reverse some of the harm of disadvantage and have a high economic return. The later in life we attempt to repair early deficits, the costlier the remediation becomes (Heckman & Masterov, 2007).

A noticeable gap in the current knowledge landscape exists at the intersection of neuroscience, education, and parental support in the context of traumatised children. A growing body of scholarly literature reports on the neurobiological mechanisms underlying trauma and its effects on learning (Conkbayir, 2021). However, there is a lack of comprehensive research on how ECD teachers may effectively incorporate neuroscientific knowledge into educational strategies to enhance parental support. Insight into the neurobiological impact of trauma on

children's developing minds serve as a fundamental basis for discourse. This understanding should be operationalised by establishing coordinated and effective support systems that engage ECD teachers and parents.

Against this background, I focus on the pastoral role of ECD teachers in supporting parents of traumatised children from a neuroscientific perspective achieved using a systematic literature review. I used a hermeneutic inquiry methodology informed by Maslow's hierarchy of needs to identify four broad topics for analysis and exposition. The outcome of the review is the development of comprehensive pastoral strategies that enable ECD teachers to apply neuroscience principles in supporting parents of traumatised children. Ultimately, this approach may lead to improved outcomes for children in ECD who have experienced trauma.

Theoretical Framework

Scholars can interpret and evaluate their findings systematically and coherently by using a theoretical framework as a lens. The theoretical lens for this research is Maslow's hierarchy of needs, which combines psychological, physical, social, and biological aspects, and is thus an appropriate resource in the study of neurobiology, child trauma, and parental support. Maslow's hierarchy of needs provides a valuable context for understanding how deficiencies in fundamental human needs may influence more complex cognitive processes. Furthermore, the theory emphasises the value of secure relationships in reducing the neurological consequences of trauma on the emotional development of children, thereby highlighting the function of affection and belonging. By applying Maslow's hierarchy of needs within the framework of this research, which focuses on supporting parents of traumatised children from a neuroscience perspective, an in-depth literature review was conducted to explore the complex interplay between physiological, psychological, educational, and social components. With this analysis I aimed to produce understanding of the effects of trauma on children and stress the crucial importance of parental support supplied by ECD teachers in cultivating resilience.

Maslow's hierarchy of needs and childhood trauma

During the last century, Maslow (1943) proposed the hierarchy of needs as a conceptual structure to understanding human motivation. According to this theory, every person has a hierarchically arranged set of needs; the fulfilment of lower-level needs gives rise to the emergence of higher-level needs. The hierarchy of needs, which includes safety, self-actualisation, esteem, and physiological requirements, is frequently applied to provide invaluable insight into human motivation and behaviour, including the causes and treatment of trauma in children.

Physiological needs

Maslow's hierarchy of needs places physiological needs at the base of the hierarchy, signifying the utmost essential requirements for survival. These consist of shelter, food, water, oxygen, and sleep. The preservation of health and the fundamental welfare of an individual depends on satisfying these requirements (Maslow, 1943). Traumatised children frequently encounter disturbances in these fundamental requirements as a result of the distressing circumstances they have encountered. The act of attending to physiological demands entails establishing and maintaining a stable and secure environment that fulfils these essential prerequisites (Coleman & Wallinga, 1999).

Safety needs

After the satisfaction of physiological requirements, safety needs take greater prominence. Attainment of stability, security, and protection against emotional and physical harm constitute this level. Safety demands comprise elements such as individual well-being, financial security, physical wellness, and a secure home setting (Maslow, 1943). Traumatised children experience increased vulnerability and insecurity, therefore, ensuring a secure and consistent setting, encompassing both physical and emotional aspects, is imperative to attend to these requirements. This entails the implementation of consistent schedules, well-defined limits, and a nurturing environment that cultivates a feeling of protection (Cook, Spinazzola, Ford, Lanktree, Blaustein, Cloitre, DeRosa, Hubbard, Kagan, Liautaud, Mallah, Olafson & Van der Kolk, 2005).

Social needs

A progression through the hierarchy brings attention to social requirements, such as love and belonging. Maslow (1943) places significant emphasis on the value of social connections and posits that the satisfaction of social requirements positively influences emotional well-being and overall satisfaction with life. Traumatised children may have difficulty establishing and maintaining trusting interpersonal connections, therefore, they have an urgent need for affection, love, and a sense of belonging (Perry & Winfrey, 2021). Facilitating the formation of a supportive community among family members or peers aids in satisfying this requirement. The establishment of trust and a feeling of interconnectedness are facilitated by constructive and supportive exchanges (Coleman & Wallinga, 1999).

Esteem needs

A person's need for esteem falls into two categories – the need for self-esteem and the need for the

esteem of others – which transcends social needs. The latter depends on recognition, appreciation, and social standing within one's social group. In contrast, self-esteem comprises recognition, mastery, and self-respect (Maslow, 1943). Children who have been traumatised frequently struggle with self-esteem and self-worth issues. Esteem needs encompass assurances of competence, accomplishment, and acknowledgement. The accomplishments and strengths of traumatised children should be supported and appreciated to uphold their self-esteem. This may entail acknowledging their perseverance, efforts, resilience and achievements, thereby fostering a favourable self-image (Cook et al., 2005).

Self-actualisation

At the apex of Maslow's hierarchy is self-actualisation, which denotes actualisation of one's individual capabilities and realisation of one's potential. The level involves endeavours to develop oneself. According to Maslow (1943), those who attain this level are motivated by aspirations for personal growth and fulfillment of their unique capabilities. When traumatised children are provided with a nurturing, supportive and safe environment, they may begin the process of discovering and developing their talents, interests and aspirations. Providing opportunities for intellectual growth, artistic expression, and individual progress may aid traumatised children to attain self-actualisation.

Maslow's hierarchy of needs provides ECD teachers and parents with essential insight as it underscores the intricate and diverse character of human motivation and stresses the necessity of attending to a wide range of needs to promote children's overall well-being, with particular reference to children who have experienced trauma.

Method

To achieve the aim with this article, a systematic literature review was conducted. Deliberate and informed review of relevant literature allows a researcher to establish a framework within which evidence from a substantial body of completed and documented work is evaluated considering the researcher's own concerns and perspective (Fraenkel & Wallen, 2010). As a teacher trainer in ECD, my concern about the high rate of trauma impacting young learners and their development was juxtaposed against neuroscientific theory and the pastoral role of the ECD teacher in supporting parents of young children who have suffered trauma. Informed by Maslow's hierarchy of needs, I critically appraised neuroscientific theories and educational and parental support resources that address childhood trauma. The review synthesised this information into a valuable body of knowledge that defines the current state of the field (Cantero, 2019) regarding the pastoral role of the ECD teacher in supporting parents of traumatised children from a neuroscience perspective.

To identify the most recent literature, commentaries and current developments on the topic, scholarly books of seminal authors and edited books augmented with journal articles and government policies were consulted using the following databases: EBSCOhost, Sabinet, Wiley, SAGE and Taylor and Francis. Access was obtained through the world wide web, the library web portal of a South African university (https://www.unisa.ac.za/sites/corporate/default/Library) and Google Scholar. The main keywords and phrases used in the search included "teacher's pastoral role", "parental support", "neuroscientific theory", "early childhood and neuroscience", "Maslow's hierarchy of needs", "trauma", and "impact of trauma on young children."

Inclusion and exclusion criteria were applied to journal articles and books. The inclusion criteria were the following: language – publications had to be in English; timeframe – articles and books should have been published between 1990 and 2023; geographical focus – studies should have focussed on South African contextual issues regarding childhood trauma; content focus – specifically the pastoral role of ECD teachers in supporting parents of young children who have experienced trauma, as well as neuroscientific perspectives on trauma, particularly in the context of ECD; types of publications – peer-reviewed journal articles and books, published nationally and internationally; older references – publications older than 20 years were included if seminal works, particularly on trauma, neuroscientific theory and Maslow's hierarchy of needs, and were cross-referenced with more recent studies to ensure relevance and accuracy.

The exclusion criteria were the following: publications not in English; works published before 1990, unless the work is deemed seminal; studies that do not specifically address South African contextual issues; studies that do not explicitly address the pastoral role of ECD teachers or the neuroscience of trauma in young children, as well as irrelevant content that does not contribute to understanding the support mechanisms for parents of traumatised children.

Keywords were also used to identify four broad topics for analysis and exposition. The topics are understanding trauma and its impact on children; the neurobiological effects of trauma on brain development; the ECD teachers' pastoral role in supporting parents with traumatised children; neuroscience perspectives on parental support for traumatised children.

Hermeneutics, a philosophical methodology effective in both textual and social science investigations, was employed to analyse the data in

this study. As a branch of interpretivism, hermeneutics seeks to analyse textual materials, human actions, events, and situations in a way that fosters understanding. The process of deciphering the meaning of a text's constituent parts while simultaneously understanding the entire text is known as analysis of textual data (Maree, 2016). The recurring cycle of attaining a more profound comprehension is referred to as the "cyclical process of ever-deeper understanding" (Babbie, 2014:137). Notably, hermeneutic data analysis compels scholars to consider the meanings of the texts meticulously. According to Butler (1998), Hermeneutics furnishes the fundamental ontological understandings that facilitate human comprehension and interpretation. Methodological deficiencies of the methodology are constituted by the subjectivity of the hermeneutic approach (Maree, 2016).

Two phases were required to complete the dialectic between interpreting the component parts of the topics and sub-topics and understanding the entire text. The initial stage of the analysis involved consideration of a distinct review of each of the four topics mentioned above. The essential components of each topic were scrutinised to attain a more comprehensive understanding of the subject matter. Then, from a neuroscientific viewpoint, the components of the topics were examined to determine whether and how they augmented the components of the other topics to ascertain the pastoral role of the ECD teacher in supporting parents of traumatised children (Walker & Avant, 2005).

Based on the findings of the review of the four topics, the second phase constituted the generation of practical strategies for ECD teachers and parents, which may significantly contribute to establishing a nurturing environment that promotes recovery and growth in children who have experienced trauma. The cyclical process for an ontological understanding that enhances human interpretation and comprehension of the pastoral role of the ECD teacher in supporting parents of traumatised children from a neuroscientific perspective was concluded with a section on recommendations.

A College of Education Ethics Review Committee at a university in the Gauteng province, South Africa, granted permission for the study to be carried out. The ethical clearance document number is 2019/05/21/1996878/03/MC. The study did not involve human or animal involvement, as it was purely a literature review.

Findings

The literature review findings are presented according to the four broad topics mentioned above.

Understanding Trauma and its Impact on Children

Trauma, defined broadly, pertains to an exceedingly frightening or unsettling encounter that surpasses an individual's capacity to manage it, resulting in enduring psychological and occasionally, physical scars (Conkbayir, 2021). Children in South Africa are susceptible to a multitude of traumas, which encompass, but are not restricted to the ensuing issues. *Crime and violence* that are prevalent in a given area may subject children to direct or indirect traumatic experiences. How children are exposed to *community and household violence*, including gang violence, protests, civil unrest, and gender-based violence, may significantly affect their overall welfare. Chronic trauma may be increased by *poverty and socioeconomic* stressors, which impact the daily lives and future prospects of children. *Bereavement and loss* as a result of health issues, such as the COVID-19 pandemic and the HIV/AIDS epidemic, have caused substantial deprivation for communities and families. *Intergenerational trauma* may be aggravated by historical trauma stemming from the effects of apartheid on communities and families (Byansi et al., 2023; Kaminer & Eagle, 2010; Saferspaces, 2023).

Many forms of trauma have a profound impact on the cognitive, emotional, and social development of a child. Symptoms, including anxiety, depression, behavioral problems, and difficulties in developing secure attachments, may result from exposure to violence, loss, and socioeconomic stress (Byansi et al., 2023). Both within the domestic and educational environments, these symptoms may be detrimental. Parents and teachers are especially susceptible to the effects of trauma on children. *Cognitive functioning* may be impaired as a result of anxiety and depression, manifesting in poor concentration and memory. Children with these mental health issues may encounter difficulties in maintaining attention on learning materials, engaging in classroom discourse, and retaining information (Chinyoka & Mushoriwa, 2018). Children who suffer from anxiety and depression frequently experience *emotional dysregulation*. They struggle to manage their emotions and resort to withdrawal or outbursts that impede the learning process for the afflicted child and their peers and disrupt the home environment. *Behaviour problems*, such as withdrawal, aggression, or disruptive behaviour, have the potential to cause a disorderly classroom environment. These types of conduct may shift the teacher's focus from teaching to the management and resolution of behavioural issues, thereby affecting the overall educational experience of the entire class (Berg, 2017; Chinyoka & Mushoriwa, 2018).

Behavioural issues may also present themselves as *difficulties in social interaction*. Children who struggle to establish secure attachments and cultivate positive relationships with their peers, teachers, and parents may experience social isolation as a consequence. Social interactions promote collaboration, communication, and a

feeling of inclusion, which are essential to the learning process. If social connections are weak, progress in the academic, social and affective domains may be hindered (Berg, 2017). *Difficulty in developing secure attachments* may put the teacher-child-parent relationship at risk. Effective teaching and learning require a healthy and positive relationship between the parent, child, and teacher triad. If this relationship is poor, teachers find it challenging to offer the necessary encouragement and support to achieve at school (Berg, 2017; Blaustein & Kinniburgh, 2019). Furthermore, children suffering from anxiety, depression or exhibiting problematic behaviour may be less likely to engage actively in class activities and discussions, or to complete their schoolwork. Academic performance and the general effectiveness of education is obstructed and reduced by poor relationships described above (Blaustein & Kinniburgh, 2019).

The impact of trauma extends beyond the current post-traumatic period, frequently creating enduring effects on the mental, emotional, and physical health of the affected child. An influential conceptual framework used to understand trauma is that of ACEs, encompassing a range of early childhood maltreatment, neglect, and dysfunction within the home, school, and community. Exposure to ACEs has been linked to a substantially increased risk of mental health disorders, substance addiction, and physical health complications in later life. Furthermore, trauma transcends the boundaries of the individual, affecting communities, generations, and interpersonal connections (Conkbayir, 2021).

Neuroscience theory is discussed in the next section to indicate the neurobiological consequences for the child. Although the fields are distinct, neuroscience and neurobiology are closely related. While neuroscience includes a larger spectrum of methods and applications in studying brain function and behaviour, neurobiology may be regarded as a subset of neuroscience.

The Neurobiological Effects of Trauma on Brain Development

With this short overview, I aim to provide insight into how childhood trauma may influence the structure and function of the brain (neurobiology) and contribute to various mental health disorders that may influence classroom teaching, learning, and home environments. The developing brains of young children are particularly vulnerable, and traumatic experiences during this critical period may disrupt normal cognitive and emotional development (Conkbayir, 2021). Trauma, especially when experienced during childhood, may have profound and lasting effects on brain development. The intricate interplay between the brain's structure and function is susceptible to disruptions when exposed to chronic stressors or traumatic events (McCrory, Gerin & Viding, 2017). Understanding the neurobiological effects of trauma sheds light on why affected children may face challenges in various aspects of their lives.

- The impact on the architecture of the brain

Trauma may impact the brain's architecture, especially in early childhood (McCrory et al., 2017). Due to the rapid formation of neural connections, the maturing brain is remarkably plastic. However, this process may be disrupted by chronic stress or trauma, resulting in changes to the structure and operation of critical regions of the brain, including the prefrontal cortex, the amygdala and the hippocampus (Teicher, Anderson & Polcari, 2012). These changes may potentially affect various cognitive, affective and behavioural processes.

- A dysregulated response to stress

The brain's stress response system, controlled by the hypothalamic-pituitary-adrenal (HPA) axis, is crucial in managing stress and maintaining homeostasis. This system may become dysregulated in the event of trauma, resulting in an overactive stress response, as well as heightened sensitivity to stress (Conkbayir, 2021; Ford & Courtois, 2020; Perry & Szalavitz, 2006). Prolonged exposure to stress hormones, including cortisol, may potentially disrupt the delicate equilibrium required for optimal brain development (Conkbayir, 2021).

- Altered processing of emotions

The amygdala, a region of the brain associated with the processing of emotions, is significantly influenced by trauma. Heightened emotional reactivity and difficulty in regulating emotions may result from an overactive amygdala (McCrory et al., 2017). The heightened emotional reactivity mentioned above may potentially hamper the development of lasting interpersonal relationships, and it may contribute to the emergence of mental health conditions, such as anxiety and mood disorders (Van der Kolk, 2014).

- Impaired cognitive functioning

The prefrontal cortex, responsible for executive functions of the brain, such as decision-making, impulse control and attention regulation, is susceptible to trauma. Impaired cognitive functioning may result from trauma to this part of the brain, such as problems with concentration, problem-solving and decision-making (McCrory et al., 2017; Teicher et al., 2012). After their emergence, these difficulties with cognitive functioning may manifest as academic and occupational handicaps.

- A reduction in hippocampal volume

The hippocampus, which controls memory and learning, is sensitive to the effects of chronic stress. Trauma may reduce hippocampal volume, which may affect one's ability to form and consolidate memories. This may result in difficulties in processing and integrating new information, which may impact both academic and social learning (Morey, Haswell, Hooper & De Bellis, 2016; O'Doherty, Chitty, Saddiqui, Bennett & Lagopoulos, 2015; Van der Kolk, 2014).

The neurobiological effects of trauma on the development of the brain underscore the importance of providing assistance and intervention to those who have encountered hardship at an early stage (Conkbayir, 2021). Understanding the influence of trauma on the developing brain facilitates the implementation of trauma-informed strategies that seek to alleviate the enduring effects. Through

gaining an understanding of the complex mechanisms through which trauma impacts the structure and operation of the brain, teachers, parents, and researchers may collaborate to advance the creation of focused interventions that foster recovery and resilience in children who have been through traumatic incidents.

The ECD Teacher's Pastoral Role in Supporting Parents with Traumatised Children

The pastoral role of the ECD teacher involves a comprehensive nurturing approach towards young children that goes beyond traditional pedagogy, including emotional, social, and psychological support. A safe and encouraging classroom is a prime task of the ECD teacher, who is an educator, carer, advisor, and guide and who has a responsibility not only to the child but also to the parent as an educational partner (McLaughlin, Aspden & McLachlan, 2015).

The pastoral role of the ECD teacher in fostering strong teacher-parent relationships becomes even more critical when dealing with parents of children who have experienced trauma. Aberg (2021) stresses the value of a partnership between teachers and parents in generating a nurturing environment that meets the special needs of children who have experienced trauma. A shared commitment to the child's well-being and growth, as well as sensitivity and effective communication, are all components of this relationship-building procedure. Some essential topics that should be incorporated into a teacher's support efforts for parents of traumatised children are discussed below.

Establishing *trust and sensitivity* between the teacher and the parent is paramount. Trust holds utmost importance for parents of children who have experienced trauma. Teachers, in their pastoral role, should establish and cultivate a relationship based upon trust while also acknowledging the importance of sensitivity when addressing the intricate nature of trauma. Effective collaboration is grounded on establishing an environment characterised by transparency and comprehension (Betancourt & Khan, 2008).

Pastoral teachers proactively engage with parents through the *provision of resources and information* pertaining to the effects of trauma on the developmental trajectory of children. Collaborative education provides parents with the means to understand their child's conduct and furnishes them with strategies to facilitate their child's recovery process (Cohen & Mannarino, 2019). Maintaining *continuously open communication* channels is vital for parents of children who have experienced trauma. Pastoral teachers should promote effective communication channels and cultivate an environment that encourages parents to express their thoughts and fears regarding the development and welfare of their child (Conkbayir, 2021).

Facilitating parental involvement in trauma-informed practices is fundamental for the pastoral teacher. Teachers must recognise the vulnerabilities of traumatised children, and they must work collaboratively with parents to develop home and school environments that are safe and encouraging (Sanger, 2020; Substance Abuse and Mental Services Administration, 2014).

Pastoral teachers should work with parents to set *realistic and trauma-informed goals* for the child's development. This requires forming a shared vision for the child's development and well-being, aligning expectations, and discussing developmental milestones (Epstein, 2018).

A nurturing environment should be created where the parents of traumatised children feel comfortable voicing their concerns and feelings, and where the pastoral teacher acknowledges the profound impact that parenting a traumatised child has on the emotions of the parent. *Emotional support* is pivotal for establishing a healthy teacher-parent partnership (Betancourt & Khan, 2008; Cohen & Mannarino, 2019).

Support groups for parents of children who have experienced trauma could be an effective intervention. Parents may experience a sense of community within these groups, where they may exchange personal narratives, gain knowledge from each other, and work together to foster an environment that is supportive and empathetic (National Child Traumatic Stress Network, n.d.).

Parental support and engagement are essential aspects of the pastoral role, which underscores the importance of a collaborative relationship between teachers and parents to ensure the holistic growth and development of the child. Collaboration enhances communication, fosters a deeper understanding of the child's unique needs, and enables a standardised approach to support in home and school environments (Epstein, 2018).

In the following section I explain some neuroscientific perspectives that teachers may use in parental support for traumatised children.

Neuroscience Perspectives on Parental Support for Traumatised Children

The importance of parental support in the neurodevelopment and recovery of traumatised children cannot be overstated, given its profound impact on cognitive functioning, regulation of emotions, and overall psychological well-being. The influence of positive interactions, defined by nurturing environments and supportive relationships in mitigating the effects of trauma on the developing brain is emphasised in neuroscience research. It is critical for teachers and parents to understand these dynamics in order to implement effective interventions that foster resilience in children who

have experienced trauma (Conkbayir, 2021). The need to establish positive interactions, supportive relationships, and nurturing environments to address major problems is explained below.

- Neuroplasticity and recovery

During early infancy, neuroplasticity – the brain's ability to reorganise and adapt – is particularly pronounced. Secure attachments leverage this plasticity to influence the formation of neural circuits. Timely and consistent nurturing during sensitive periods in early development is crucial for optimal neurobiological outcomes (Blaustein & Kinniburgh, 2019). The neuroplasticity of the developing brain allows for healing and adaptation. Secure attachments promote positive neuroplastic changes by encouraging the rewiring of neural circuits affected by trauma (Conkbayir, 2021). This adaptability facilitates both healing and resilience.

- The amygdala and regulation of emotions

The amygdala, which is a region of the brain responsible for the processing of emotions, is severely damaged by trauma. Research has shown that secure attachments impact the amygdala's responsiveness, thereby facilitating the formation of effective strategies for regulation of emotions (Van der Kolk, 2014). For traumatised children, who may have heightened emotional reactivity, this regulation is vital.

- The prefrontal cortex and executive functions

The development of the prefrontal cortex, which controls executive functions, including impulse control, decision-making and cognitive flexibility, is profoundly affected by secure attachments. Fostering a supportive and caring environment may facilitate the development of more effective prefrontal circuits in children who have experienced trauma (McCrory et al., 2017).

- Stress response systems and secure attachments

Often children who have experienced trauma exhibit a dysregulated response to stress. Neuroscience research has found that secure attachments significantly influence the stress response, specifically by regulating the HPA axis (Conkbayir, 2021; Ford & Courtois, 2020; Perry & Szalavitz, 2006). Secure attachments enable the development of a stress response that is adaptive, thereby mitigating the lasting effects of trauma.

- Attachment security and mental health outcomes

Positive interactions that create secure attachments are crucial to the process of neurodevelopment. Brain development is positively correlated with attachment security, which influences the formation of neural circuits responsible for regulating emotions, assessing self-worth, and facilitating social cognition (Van der Kolk, 2014).

- Epigenetic influences of positive interactions

Epigenetics, as it pertains to trauma, encompasses alterations in gene expression that are impacted by traumatic events. Such modifications have the potential to affect an individual's stress response and susceptibility to mental health disorders. Klengel, Metha, Anacker, Rex-Haffner, Pruessner, Pariante, Pace, Mercer, Mayberg, Bradley, Nemeroff, Holsboer, Heim, Ressler, Rein and Binder (2013) and Yehuda, Daskalakis, Bierer, Bader, Klengel, Holsboer and Binder (2016) provide evidence that epigenetic modifications induced by trauma may impact neurobiological pathways, thereby creating lasting implications for mental health. Epigenetic effects may result from positive interactions, influencing both gene expression and cellular processes. McGowan, Sasaki, D'Alessio, Dymov, Labonté, Szyf, Turecki and Meaney (2009) found that supportive caregiving may result in favourable epigenetic modifications, thereby potentially ameliorating the effects of early adversity on gene regulation.

- Trauma-informed parenting strategies

Understanding the neuroscience of trauma guides parenting strategies that are informed by trauma. Establishing secure attachments is facilitated by these strategies, including fostering positive interactions, establishing a safe and predictable environment, and providing consistent emotional support (National Child Traumatic Stress Network, n.d.; Siegel & Hartzell, 2003).

- Role of caregiver sensitivity

To assist traumatised children, it is critical that carers demonstrate sensitivity, as supported by neuroscientific evidence. A secure base is established when an adult responds with sensitivity to a child's signals; this reinforces the child's trust in their carer and sense of safety, which are fundamental to their neurobiological well-being (Cohen & Mannarino, 2019).

The significance of early caregiving experiences on neurodevelopment is emphasised by neuroscience perspectives on secure attachments and parental support. Secure attachments contribute to long-term mental health outcomes, cognitive development, emotional regulation, and shaping the structure of the developing brain. The establishment of an environment marked by supportive relationships for children who have experienced trauma is a key component of any trauma-informed approach, which is informed by the neurobiological effects of supportive interaction among the teacher, child, and parent.

Discussion

In South Africa, the pastoral role of ECD teachers aligns with the nation's commitment to holistic child development and partnership with parents (DHET, RSA, 2011; DoE, RSA, 2000). Moreover, the returns on investment in an effective ECD teaching corps is of equal interest to educators and policymakers worldwide. Van der Gaag and Tan (1998) stress that the direct benefits of ECD to the child (e.g., health checkups, nutrition, monitoring of mental well-being) are compounded by indirect benefits to the community (e.g., greater parent and community participation, parental training) and long-term economic benefits to the nation by producing productive citizens from those individuals earlier enrolled in ECD programmes.

Considering the nation's socioeconomic and cultural diversity, pastoral teachers assume a critical responsibility in nurturing individuals who are not only resilient but also socially conscious and academically equipped. The duties associated with this position are diverse in nature, intending to provide comprehensive care for the entire child and establish a favourable framework for continuous education and overall welfare (McLaughlin et al., 2015; Ogina, 2010). Recent research (Craig et al., 2022; Saferspaces, 2023) confirms the widespread occurrence of childhood trauma in South Africa. As a result, attention to the pastoral role of the ECD teacher has recently extended working with children who have endured trauma and their parents.

Therefore, ECD teachers should assume a pastoral responsibility that necessitates cooperation with parents to establish a nurturing milieu for children who have experienced trauma (Aberg, 2021; Epstein, 2018). ECD teachers, as skilled observers of children's conduct, are in a distinctive position to discern indications of trauma and provide parental support. Establishing healthy teacher-parent relationships emerges as a fundamental element in facilitating the healing process of children (Betancourt & Khan, 2008; Conkbayir, 2021). The provision of essential care, understanding, and resources to assist traumatised children in surmounting the difficulties linked to trauma and flourishing in their developmental trajectory is dependent upon the collaboration between teachers and parents (Cohen & Mannarino, 2019; Sanger, 2020; Substance Abuse and Mental Services Administration, 2014).

Teachers may effectively assist parents by employing focused strategies that acknowledge the effects of trauma on brain structures and functions (Conkbayir, 2021; National Child Traumatic Stress Network, n.d.; Siegel & Hartzell, 2003). Neuroscientific viewpoints regarding parental assistance for children who have experienced trauma emphasise the profound impact that secure attachments have on neurodevelopment. Developing secure attachments serves a dual purpose of mitigating the immediate consequences of trauma and establishing the groundwork for a neural architecture that is more adaptable and resilient (McCrory et al., 2017; McGowan et al., 2009). Early intervention becomes increasingly critical when children encounter trauma during this critical developmental period. The provision of timely and focused assistance is critical in preventing the enduring effects of trauma and facilitating the development of resilience. Acknowledging the neurobiological consequences of positive interactions provides insight for trauma-informed approaches that emphasise establishing nurturing environments for children who have experienced trauma (Conkbayir, 2021).

When Maslow's hierarchy of needs (which includes physiological, safety, social, esteem, and self-actualisation) is applied to traumatised children, it becomes apparent that attending to these needs is fundamental to children's emotional recovery and development. Maslow's hierarchy of needs framework emphasises the significance of establishing a safe and nurturing environment for children whose sense of safety and belonging has been disrupted. Teachers and parents have the potential to significantly contribute to the development of their child's emotional well-being and ultimate self-actualisation by placing these essential requirements first (Coleman & Wallinga, 1999; Cook et al., 2005; Perry & Winfrey, 2021).

ECD teachers' addressing the needs of parents of traumatised children requires an approach that combines insights from neuroscience and Maslow's hierarchy of needs as indicated in the ensuing recommendations. The following hands-on strategies for ECD teachers and parents play a pivotal role in creating a supportive environment that fosters healing and development in traumatised children.

Parental Involvement and Education

Neuroscience origin: Educating parents about the neurobiological impact of trauma equips them with a deeper understanding. Informed parents may better support their child's needs (Cook et al., 2005).

Maslow's theory: Involving parents in their child's education fulfils the needs of love and belonging. Parent education workshops and sessions may be arranged to enhance parental knowledge and engagement (Maslow, 1943).

Building Strong Teacher-parent Relationships

Neuroscience origin: Secure attachments are crucial for neurodevelopment. Positive teacher-parent relationships contribute to the child's sense of belonging and trust, impacting neural connectivity (Gee, Gabard-Durnam, Telzer, Humphreys, Goff, Shapiro, Flannery, Lumian, Fareri, Caldera & Tottenham, 2014).

Maslow's theory: Addressing the needs of love and belonging is essential. Encouraging collaboration between teachers and parents will foster a supportive community for the child (Maslow, 1943).

Trauma-informed Teaching Practices

Neuroscience origin: Understanding the impact of trauma on the brain informs teaching strategies. Trauma-informed practices recognise the unique needs of traumatised children (Cook et al., 2005).

Maslow's theory: Teaching approaches should be tailored to address the child's self-esteem and competence needs. To recognise and celebrate a child's achievements will boost self-worth (Maslow, 1943).

Creating a Safe and Nurturing Environment for the Child

Neuroscience origin: Traumatised children benefit from environments that promote a sense of safety and security. This helps regulate stress responses and positively impacts neural circuits (Conkbayir, 2021).

Maslow's theory: Fulfilling the safety and security needs is foundational. Establishing routines, clear boundaries, and a supportive atmosphere will create a safe space (Maslow, 1943).

Emotional Regulation Techniques

Neuroscience origin: Traumatised children may struggle with emotional regulation. Teach and

model strategies such as deep breathing, mindfulness, and positive affirmations to help regulate emotions (Goleman, 1995).

Maslow's theory: By addressing emotional needs, teachers and parents contribute to the child's overall well-being and support the development of effective emotional regulation (Maslow, 1943).

Cultivating a Sense of Belonging

Neuroscience origin: Social connection positively influences neural development. If constructive peer interactions are encouraged, it will raise a sense of community and belonging for traumatised children (Tottenham, 2014).

Maslow's theory: Emphasising love and belonging creates inclusive environments that promote positive relationships among children. This provides a supportive social context (Maslow, 1943).

Individualised Learning Plans

Neuroscience origin: Acknowledging the range of different responses to trauma, individualised learning plans, which commonly form part of remedial programmes, meet the unique needs of each child, considering their specific challenges and strengths (Teicher et al., 2012).

Maslow's theory: Customising learning experiences helps fulfil the child's self-actualisation needs. Opportunities for exploration and skills development based on individual interests, aptitudes and capabilities should be provided (Maslow, 1943).

In conclusion, incorporating neuroscience and Maslow's theory provides a holistic framework for practical strategies in supporting parents with traumatised children. By prioritising safety, building strong relationships, implementing trauma-informed practices, and recognising individual needs, ECD teachers and parents may create environments that foster healing, resilience, and optimal development in traumatised children.

Maslow's hierarchy of needs provides a sound and holistic framework for addressing the multifaceted aspects of a child's development. ECD teachers may apply this theory by ensuring that basic physiological and safety needs are met in collaboration with parents before progressing to higher-order needs such as belonging and esteem. Supporting parents in understanding and fulfilling these needs is integral in creating a foundation for trauma recovery.

Holistic early intervention in trauma recovery for ECD children is a powerful tool for breaking the cycle of adversity. When ECD teachers in partnership with parents recognise and attend to the consequences of trauma in the formative years informed by and utilising a neuroscientific perspective, they may improve the immediate welfare of a child and establish a solid foundation for future resilience and health. The importance of early intervention lies in its ability to influence the trajectory of a child's life by facilitating recovery, fostering constructive growth, and ultimately contributing to the development of a more robust and resilient society.

Conclusion

The pastoral role of ECD teachers in supporting parents of traumatised children from a neuroscience perspective in the light of Maslow's hierarchy of needs contributes to a more informed, empathetic, and collaborative approach to child trauma. By integrating neurobiological insights into educational practices, ECD teachers working with parents may establish beneficial settings that foster recovery, resilience, and maximum development for children who have experienced trauma.

Collaboration between ECD teachers and parents cannot achieve optimal success without broader social support. In this context, it is crucial to involve specialised mental health services, community organisations, and the support of education and social services departments to assist parents with traumatised children. In this endeavour, the state has a cardinal role in supporting children and parents by incorporating practices informed by neuroscience into ECD policies, relevant departmental and community initiatives and parent and teacher training programmes in ECD.

Notes

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