

**DOMESTIC VIOLENCE, RISKY FAMILY ENVIRONMENT AND CHILDREN:
A BIO-PSYCHOLOGY PERSPECTIVE****Olusegun Emmanuel Afolabi***University of Botswana*

Though a large body of research has investigated the impacts of domestic violence on adult victims only few studies have been devoted to the exposure of children to probable inter-spousal trauma that disrupt their neurological and biochemical pathways in development. The aim of this paper is to analyse the current empirical research that discusses the biological and psychological inference of domestic violence and risky family environment on children's health. In realizing this objective, the paper used the ecological framework to explain the interaction effects of bio- psychological processes on emotional regulation and social competence skills of children living in a domestic violence and risky family environment. Finally, the study shows that a risky and harsh early family environment exacerbates disturbances in children' physiological and neuro-endocrine responses to stress, and also has long-term adverse implications on their mental health.

When we deliberate about the impacts of household violence and risky family environment on children's well-being, we are looking at the implication of living in a home where marital conflict and spousal violence are happening. Domestic violence is globally described by various scholars, academicians and professionals in human development and public health as a stern social problem, and to say the least, a human rights violation. The recent debate over the years on the issue explains the significant influence it has on the mental health of young children. Broad research evidence also indicates how intensely damaging is risky family environment for children's well-being (Margolin & Gordis, 2000, Mathias, Zeanah, Danis, Hirshberg, Benoit, Miller & Heller, 1999). Though, the awareness of the ordeal of children induced by family violence are mentioned in various pieces of literature [McIntosh, 2009], current and past literature still labelled marital conflict as the strongest predictor of behavioural problems in children (Marshall & Watt, 1999) and was connected with internalized and externalized behavioural conduct in adulthood. As a baffling topic for academia, practitioners, and policy-makers, children who live in a violent domestic household are influenced in their bio- psychosocial development and suffer deleterious impacts on their socio-cognitive functioning (Hetherington & Kelly, 2002). Although evidence shows that most child victims are resilient, the significant few, still suffer long-term adverse psychological and biological consequences in later life (Hetherington & Kelly, 2002).

Moreover, the main problems, identified in literature are how to protect the vulnerable young children from the probable inter-spousal trauma that disrupts their neurological and biochemical pathways in development (Dodd, 2009, Kershaw et al., 2008, Barnish, 2004, McGee 1997, Humphreys, 2006,). As often mentioned, the most cited predictive factors that promote negative outcomes in children are the risky family environment (Cummings & Davies, 2010; Hetherington & Kelly, 2002). Besides, a collection of cross-sectional and future studies revealed that children reared in circumstances, i.e. (irritable and quarrelling environment) developed mental health problems earlier in life, i.e., conception to adulthood (Repetti et al., 2002). Thus, a *risky family* is a childhood household milieu that consists of persistent or constant skirmish, violence, as well as crisis ridden in lieu of warmth and nurturing milieu (Taylor, Lerner, Sage, Lehman, & Seeman, 2004). Early exposure of children to such complex environmental prompts different forms of behaviour that hastens the acquisition of biological and psychological impairment that come with persistent experience of trauma (Repetti et al., 2002).

Although, emergent research establishes a possible lasting legacy and relationship between childhood riskier family milieus and bio-psychosocial impairments in adult age, similarly, other scholars like

Repetti, Taylor and Seeman (2002) also established a number of childhood's biological and psychological problems that are linked with the occurrence of dangerous household environments such as nervousness, behaviour disorder, antisocial conduct, and poor cognitive abilities to mention a few. Apart from the childhood implications, negative family exposures promote psychopathology in early adulthood, and later relates to decreased trauma responses, less significant self-rated health, plus poor social relations (Taylor et al., 2004). Besides, research also maintains that domestic violence (DV) experiences increased depressive symptoms in adults (Sen et al., 2010), nervousness intensities (Edge et al., 2009), as well as disturbed emotional processing (Taylor, Eisenberger, Saxbe, Lehman, & Lieberman, 2006). In addition, children's household milieu also acts as a mediator for children's health and quality of life and dangerous family circumstances promote poorer sleep due to daily distress (Hanson & Chen, 2010). However, what is yet to be confirmed by most researchers on the topic is the interplay between biological and psychological processes that promote these negative outcomes.

Purpose

Studies that address biological and psychological influence of living in a risky family environment are still new. Research has not clearly solved the genetic bases for risky family environments and the impacts they have on the child's 'well-being. This paper analyses broad assessment of bio-psychological inference of domestic violence on children's mental health, and also examines the implications that such experiences have on their emotional regulation and social skills. Besides, the paper also discusses broad research about childhood ordeal, particularly, in the context of domestic violence (Center for Disease Control [CDC], 2013; Chapman, Liu, Presley-Cantrell, Edwards, Wheaton, Perry & Croft, 2013). Though, current research on bio-psychological processes of children living in a violent domestic environment emphasizes more narrow topics, i.e., (adult victims), only a few offer a reliable framework for child victims of the incidence. Finally, an ecological framework that explains the interaction effects of biological and psychological processes of children witnessing domestic violence are presented in this study and possible areas for impending research are debated.

Methodology

This paper analysed and reviewed empirical literature in order to investigate and checked new empirical studies that link risky family environment and children's bio-psychological development. The study collated and reviewed relevant articles, books, journals, and meta-analysis of domestic violence, risky family environment and children's mental health. Both the ERIC and PSYCHLIT databases were searched using the following keywords: domestic violence, risky family environment, children mental health, and bio-psychological process. This procedure initially reported about 2283 articles, journals, technical reports, paper presentation and book chapters covering over a 20 year period. The research was lessened to a relatively few hundred of studies that are pertinent and relevant to the theme of this paper. The contents of the remaining several hundred of articles cum journals were further scrutinised and only those that reported empirical findings were kept aside and used in this review, while others were left out of further consideration. This process shows that only a few studies documented empirical findings about the link between living in a domestic violence or risky family environment and children bio-psychological processes. Even among the studies that document empirical analysis, only those that show Pearson correlations between risky family environment indicators and children biologically and psychological development were used. To verify references, manual searches of relevant journals and articles related to the paper were performed.

Background Information

Overviews of Domestic Violence and Children's Mental Health

Research continues to prove that young children are potential victims of domestic violence at home and this happens in different ways. A significant body of research argued that children living in a risky family environment are prone to health problems such as emotional and behavioural difficulties. For instance, a study conducted by Fealty and colleagues in (1998) reported a robust association between early exposure to domestic violence and bio-psychological disorders in adulthood. Also, scholars such and Walker and colleagues (1999) reported a similar relationship between risky family environment and children mental health. This among other research confirmed the link between children health problem and their contextual environment (Repetti et al., 2002). The significant question that continues to generate debate in most literature is why early childhood experience of an adverse household is linked with such broad range of health problems that continue till adulthood.

Domestic violence remains an endemic and dangerous situation that impacts negatively on young people's health and has long-standing implications on their development (Peedicayil et al., 2004). In fact,

most research identifies family, social and biological environments like, family's socio-economic resources and inherited factors, as a contributing factor to a risky family social environment. For example, children's brutal exposure to household violence is often followed by many negative evolving factors such as, poverty, poor socio-cognitive functioning, mental health issues, female-headed household (Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997). Also, children living in such a risky household mostly get involved in the violence. Most of these children feel that they can call, seek for support or being branded as the main cause of the abusive situation. Although children live in ferocious households, they are prone to menace of physical harm both during prenatally and postnatally (Peedicayil et al., 2004). Besides, hereditary factors are also mentioned as determinants of risky families. For instance, some characteristics that promote and sustain risky family settings may have a genetic predisposition (Plomin, DeFries, Craig, & McGuffin, 2003). Therefore, children who are hereditarily inclined to particular difficulties (hyperactive or excessively inhibited temperaments) are adversely influenced by a risky household situation than those who are not exposed to such weaknesses. To date, research has not clearly solved the genetic foundations for risky family environments and their impacts on children. This drawn global attention, particularly on the causes, effects and how it portends the biological and emotional well-being of young victims.

Though, debate on DV is now globally embraced by various researchers, the focal point of most research on the topic was the adult victims. The problem of abused women has been mounting over two decades, not until recently that the debate about their children receives much consideration and respect it deserved in research literature. While research demonstrates that young children respond to domestic violence in many ways, it is also confirmed that children who constantly experiencing occurrence of domestic violence against a parent bear the worst result of its effects later in life. The emotional disturbance displayed by such children is mostly noted by teachers in school, particularly, in their observation of traumatic violence exhibited when they play with peers, and by paediatricians in the hospital, when they assess children slow developmental progress. Although some of these children are highly aggressive in their general dealing or relationship with peers, they also show signs of depression and withdrawal in their day-to-day activities (Osofsky, 1997).

Most child victims of DV show signs of distress in their development. While some displays high sense of resilience to such negative exposure, others are adversely affected by it. Thus, this risk factor has adverse effects on individual children bio-psychological development. However, research documents a significant correlation amongst children witnessing DV and those physically maltreated (Kitzmann et al., 2003). They also established that children exhibited high levels of resilience to the harmful consequences of witnessing violence at home. Similarly, children living in violent households display signs of social and emotional problems, when compared to those who do not experience DV (Graham-Bermann, 2001). For instance, the higher the level of family or social support available to a child at risk, the more resistant he/she will be (Masten & Reed, 2002). On the contrary, positive parenting such as dynamic parenting, emotional and stable parents alleviate harm and danger for young children (Edleson, Mbilinyi, & Shetty, 2003; Levendosky, Lynch, & Graham-Bermann, 2000; Sullivan, Nguyen, Allen, Bybee, & Juras, 2000) and confirmed the significance of early intervention on children's well-being (Jenkins & Bell, 1997). Despite this assertion, children raised in a violent domestic environment displayed a high risk of maladjustment in life when compared to those from a violence free environment.

Bio –Ecological Perspectives

According to Swart and Pettipher (2005) and Lewis (2009) analysing individual proximal and distal environments that form the basis for understanding the complexity in the individual's life, particularly the interaction and interrelationships between individual and the multiple systems that constitute their environment. As a child grows up they pass through different developmental stages that are influenced by the environment (Dawes & Donald, 2000). This constant interaction significantly influenced their behaviour either positively or negatively, depending on the circumstances they find themselves in. Therefore, trauma or misery does not only limit an individual in a system, but also occur within diverse systems. In lieu of this aforementioned, developmental-ecological perspectives offer a useful framework for better understanding of childhood exposure to risky environment. This theory highlights the significant impact that developmental processes, situational context, and numerous events and interaction has on adaptive as well as maladaptive growth (Rutter & Sroufe, 2000). The theory also linked household intricacy, social, and ethnic factors to developmental adjustments and abnormality in young children and made single-variable reasons held for more examination.

The bio-ecological framework explains how youngsters adjust to cruel situations in their environment, i.e., direct and indirect kinds of violence that compromise their adjusting methods and on-going development. Children's continuous exposure to DV impacts negatively on their biological and emotional adjustment and later leads to nervous and self-doubting approach in relationships which time and again manifest by robust feelings (e.g., frustration, dissatisfaction, aggression, panic). Also, children react differently to their exposure to DV by demonstrating different emotional problems. This is logical as it signifies child's adjustment to maladaptive circumstance. Though, bio-ecological framework permits interaction and understanding at different levels within social systems, what is mostly unnoticed in the research literature about children's mental health is the significance of ecological factors that act as mediators to violence.

Moreover, children experience violence in their home in three different ways, i.e., child's abuse at the ontogenetic level, DV at household/micro system level and societal violence at the exosystem level. Nevertheless, research documents a significant correlation between those experiencing one of these types of violence and other forms of violence. McCloskey, Figueredo, and Koss (1995), submits that a man who subjects or physically abuses his wife is more probable to physically harm their offspring. Research also argues that there is a relationship between children's experience chronic societal violence and intra-family skirmish (Osofosky, Wewer, Hann & Fick, 1993). Also, developmental risk literatures demonstrate that children who experience maltreatment at home are also victims of community anguish and that multiple risk factors upsurge youngsters 'menace for maladjustment exponentially.

In addition, Rutter (1997) established that children who experienced abuse and ill-treatment at home were at risk of developmental psychopathology. This assertion supports the general beliefs that the ecological influences, i.e., (compensatory factors) guard youngster from negative life exposure and reduce the danger of poor developmental effects. Unfortunately, only few researches focus on these broader ecological issues due to lack of child's-centred multi-disciplinary frameworks that embraces developmental preclusion and treatment exertions for offspring experiencing DV. On the other hand, research on marital conflict have come up with a heuristic hybrid process to increase our knowledge on how household and society menace directly or indirectly contribute to childhood psychopathology (Chiccetti, 1996, Rutter, 1997). Bio-ecological model advances future postulation about the consequence of household violence on youngsters' well-being by using rudimental research techniques and systematic philosophies of ecological theory and developmental psychopathology to analyse the relationship between domestic violence and child development. This means that, ecology is contextually based and developmental psychopathology is child focused. Therefore, bio-ecological theory incorporates all the finest of these methods and covering the following mutually dependent foci of study: (a) understanding the difficult understudy in the context, (b) appreciating the influence of difficulty understudy on the youngster with an appreciation for the multidimensional child engagement, and (c) considering the significance of difficulty on child activity over time. So, the process of examining children's outcome as a determinant of their development and transformation over time are symbols of developmentally sensitivity investigation.

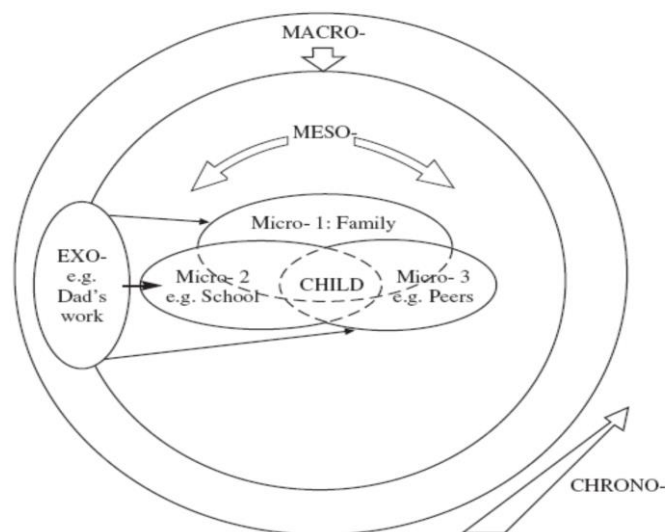


Figure 1: Bio-Ecological Model, from Donald, et al., (2006)

The model demonstrates the constant interactions between an individual and the various systems that constitute his or her environments. This interaction has a significant consequence on a developing child, (i.e., biological and psychological) including the proximal environment in which the child lives. However, the life experience that a child has, whether negative or positive, affects their well-being and development (Lewis, 2009). The question is how a child's social context that consists of risky and violent conditions influenced his/her development?

The Link between Domestic Violence and Trauma

According to Biersteker and Robinson (2000), family circumstance such as risky household environment influenced parenting style and parents' ability to support and care for their kids. Family interactions are threatened by ways parents relate or engage with each other. A child exposed to DV and risky family environment can display traumatic experiences. (DSM-IV-TR, 2000) and these traumatic situations affect their biological and psychological development. Children can develop continuous fear and panic for their safety with a feeling that this experience can harm them. Based on bio-ecological framework, whatever happens in a child's household environment has a significant effect on their well-being and development (Bronfenbrenner, 1994), including their interaction with the environment. Scholars such as Gabowitz, Zucker and Cook, (2008) and Lewis, (2009) maintain that children living in a DV environment displayed different behaviour such as fear, i.e. (future attack or experience of violence), emotional changes (powerlessness, emotional numbing, and a lack of security). Children's emotional changes can also lead to symptoms such as nervousness, restlessness, irritation and guilt. Similarly, children exposed to household violence experience lethargy, lack of energy, mood swing, sleeplessness and nightmare, poor social conduct and last but not the least, poor cognitive ability that affects their memory.

Variability in Children Adjustment to Domestic Violence

Decades of domestic violence confirmed that the childhood risky family environment is major predictors of childhood disorder, yet, there are still significant individual differences. As mentioned earlier, children living in risky households are also victims of maltreatment and abuse (Hamby et al., 2010). The degree of exposure was reported as predicting adverse mental health signs (Finkelhor, Ormrod & Turner, 2007). However, children's adjustment to risky family environment is influenced by individual differences in resiliency. Numerous protective factors such as easy personality; social skills; intelligence; positive parenting; and social network that relate with risk factors such as high temperament, low intelligence, poor social skills, parental depression and negative peer interactions) are identified as defining vulnerability in youngsters (Hetherington & Kelly, 2002). Therefore, household milieu and child's physiognomies are vital in explaining the impacts of childhood risky family environment on children's mental health.

The diathesis *stress model*, states that, the psychosocial stressor is explained through analyses of individual's past knowledge, including the bio-psychological and social vulnerabilities (Sbarra, Hasselmo & Nojopranoto, 2012). These pre-disposing features are related to both the distal and proximal effects surrounding the stressor, i.e. domestic violence. The life stressors for young children vary due to the level of stress they can condone and reflects their individual susceptibilities. Children experience DV through different susceptibilities, founded on bio- psychological tendencies and life experiences. However, the interface between experiences related stressor, biological inclinations, and life histories impacts on post stressor modification stage. Though, most youngsters show signs of highly resilient and exhibits normal functioning following their exposure to household violence, nonetheless, the majority of children victims demonstrate important signs of instability in life. These children represent those that are raised in a high *risky family environment* where annoyance and violence are highly related with parental psychopathology (depression), drug abuse, and negative child-rearing (Cummings & Davies, 2010; Repetti, Taylor & Seeman, 2002). Such youngsters are prone to fixation and stress-related issues that cut across several areas.

Parenting Capacities

Research shows that children's exposure to DV is not only influenced by the situation of the abuse, but also by the relationship they experience with their parent/families, i.e. be it the culprit or the target of the violence. This invariably influences the value of the parent - child relationship. Mullender et al., (2002), submits that parents perceive domestic violence as having a negative influence on their parenting. Also, Holtzworth-Munroe et al., (1997), conclude that nearly one or two third of those women experiencing domestic violence exhibit high significant experiences of low self-esteem, post-traumatic stress disorder and despair. Besides, reports, documents that mother may experience a regularly overwhelmed state of

mind and still show signs of withdrawal or be emotionally unstable to meet her child's need. However, the most significant roles of any parents are to bring life into the child's world; making their experience manageable and bearable; and support children to develop their cognitive ability. Parents should make emotional sense of what has happened to them; give thought and reflection; and last but not the least, permitting the child to assimilate information (McIntosh 2002).

Also, child development is highly affected or compromised when parents are separated from emotional experiences of DV. Williams (2003) confirms that the contexts of family violence influence the health and well-being of the caregiver and threatens practicability of the father-child interaction. Mostly, DV impacts negatively on parenting skills and prompt most abused parents to start worrying about their own needs (Sullivan et al., 2004). Also, domestic violence is linked with maternal control and discipline (Holt et al., 2008). Rivett and Kelly (2006), establishes that women are liable for emotional and well-being of their children and they are blamed for any kinds of emotional disturbance in their development. Similarly, Humphreys (2006) reports that the maternal authority is highly undermining where a child witness the mother being abused, as this will continue to torment the child even after the family has moved out of the abusive home. Buckley et al., (2007), states that most adolescent display signs of challenging behaviours after exposing to violence in their home, for instance, children show bad conduct such as physical aggression against their mothers; school refusal and stealing even after leaving the abusive home. Nonetheless, the general consensus on the subject confirms the significant importance of parenting capacity by maintaining that mother's parenting skills cannot be under-estimated in child development.

Moderating Factors

Despite conceptual inconsistencies observed in earlier literature on domestic violence, research has reliably confirmed that, characteristics such as positive and supportive caregiver; warm parenting; parenting stability; child engaging temperament; are significantly associated with resilience (Masten et al., 1999; Wyman et al., 1999). Similarly, reports document a highly significant correlation between positive adaptation and lower level of risk, such as less parental psychopathology; life anxiety; poverty; and membership of most cultural groups (Bradley & Corwyn, 2002; Leech, Larkby, Day, & Day, 2006) and negative implications that come with children living in a DV environment (e.g., Kitzmann, Gaylord, Holt, & Kenny, 2003). Also, limited research explains various characteristic that described children who keep up a positive adaptation despite their exposure to domestic violence (Grych, Jouriles, Swank, McDonald, & Norwood, 2000). This shows that childhood exposure to DV is based on the interaction of an array of risk and resilience factors. On the other hand, Sternberg et al., (2006), reiterates that child's age does not moderate on internalizing behaviour, although older children were at a greater clinical risk. Besides, early exposure to DV impacts negatively on child development comparable to the old age due to the negative influences on the subsequent chain of development (Holt et al., 2008).

Domestic Violence and Developmental Stage

Recent research on domestic violence highlights biological processes that explain negative outcomes in children. Studies confirmed a significant relationship between exposures to hostile life experiences such as IPA and children's socio-cognitive functioning. It is reported that children living in a DV or high risk environment at the age of three are likely to impact negatively on their memory and cognitive functioning by the age of five (Gustafsson, Coffman, Harris, Langley, Ornstein & Cox, 2013). Also, Gewirtz and Edleson, (2007) established that the most identified primary developmental tasks of infancy are forming affection with the main caregiver. However, to achieve complete dependency, an infant needs a primary caregiver that is passionately sensitive to their needs, promotes a sense of confidence and security and offer safe or enriching environment for them to explore. Similarly insecure attachments are developed when parents fail to respond adequately to their baby's needs. Gerhardt, (2004), explains that DV disturbs children's attachment relationships in a household. The emotional regulation problems between parents and children form the basis of their insecure attachment and causes anxiety for young children. Moreover, failure to address this problem leads to negative child's physiological responses such as, neuronal networks and biochemical functioning. This distorts the stress response and creates high levels of cortisol in the brain region.

Also, research confirms that distress influences children stress response system up till the age of three. It is also established that early exposure to stress influences a child's ability to respond positively to future stress (Gerhardt 2004). However, with the coexisting psychological expectations, this experience creates an emotional framework that guides individual's responses. Similarly, Cummings et al., (2009) confirm that children respond to family violence through integration of both biological and psychological

processes. On the other hand, research confirms that bio-psychosocial model of emotional and physiological reactivity is a strategy that supports children witnessing domestic violence and that children's regulatory process is a moderating factor in their adjustment to violent situations.

Additionally, studies show that toddlers and pre-school children face increasing developmental challenges in life. Besides, Gewirtz and Edleson, (2007), highlight the significant importance of child's learning to behaviour. They argue that emotional and cognitive states become important as a child learns to comprehend and manage their emotions through interaction with sensitive and responsive primary caregivers. Similarly, Cicchetti and Toth, (2005) maintain that maltreatment is a risk for development of effective regulation in young children and limits their recognition, understanding and expression of emotion. As a result of their developmental limitations, young children seek alternative ways to express themselves. Thus, McGee (1997) maintains that CEDV manifest or shows their distress indifferent forms.

Some of these children react with aggression, destructive and externalizing behaviours, while others show no sign or form of behavioural changes in life. On the other hand, some children react emotionally to fearful inhibited or over controlled and internalizing behaviours. Moreover, Carlson, (2000) establishes that because of anxiety and fear for their safety children react clinging and demanding. Research also explains that fear is significantly related to psychosomatic problems, e.g., headaches; stomach aches (Holt et al. 2008). Also, Osofsky, (2003) established that children are vulnerable to domestic violence situation and they show signs of distress through regression in language and toileting. Therefore, children of school age need to negotiate an increasingly complex social milieu and develop necessary skills that will help them to improve and develop effective communication with their peers and people around them, Furthermore, research shows that children react and understand their exposure to domestic violence either through externalizing or internalizing behaviour and this variably or invariably impact on their social competence in such contexts.

Besides, Gewirtz and Edleson, (2007), highlight that some children exhibit lesser social competence and this influences the way they observe or misinterpret social cues in their environment. Similarly, research shows that some children display common attitudes and think that the best way to manage conflicts or aggression is through violence (Osofsky 2003). Moreover, this attitude and behaviour if not properly addressed can lead to conduct disorder and disobedience in a school setting (Carlson 2000). Also, Cicchetti and Toth (2005), confirm that maltreated children show more of antisocial behaviours and less pro-social ones compare to those from enriching and friendly environment. Carlson (2000) maintains that children experience DV display poor peer relationship, low self-esteem, anxiety and depression. This emotional reaction includes severe anxiety and post-traumatic stress disorder (PTSD), hyper vigilance, emotional numbing and flashbacks (Carlson 2000).

Biological Processes

Repetti et al., (2002) linked early children's exposure to risky and chaotic family environment to discrepancies in emotion-regulation skills and negative emotional development in life. The fact that a child live in a domestic or a violent household and display chronic negative emotional development earlier in life make negative experience a likely indicator of disturbances in emotion-regulation skills and as contenders for facilitating the link between early family environment and health consequences. For instance, example, aggression has been linked with coronary heart disease (e.g., Dembroski, Mac-Dougall, Williams, Haney, & Blumenthal, 1985); epidemiological indication explains dose-response association of nervousness to coronary heart infection (e.g., Kubanski, Kawachi, Weiss, & Sparrow, 1998). Also, major despair, low-spirited symptoms, history of dejection, and nervousness is recognized as predicting cardiac actions (Frasure-Smith, Lesperance, & Talajic, 1995).

Children's proximal and distal environments are also reported as vital in determining their ontogenetic development. For instance, an enriching rearing environments characterized by positive household relationships that promote care, responsiveness and engagement is linked to a constructive developmental outcome in children. However, punitive, split and unpredictable family settings are linked with maladjustment (e.g., 1994; Dunn & Davies, 2001; Sturge-Apple, Davies, & Cummings, 2006). Earlier research on development and family study explained the fundamental mechanisms that explain such associations. Most studies define the descriptive part of children's emotionality (e.g., Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006), mental functioning (Grych, Harold, & Miles, 2003; Jouriles, Brown, McDonald, Rosenfield, & Leahy, 2008; Sturge-Apple, Davies, Cummings, Winter,

&Schermerhorn, 2008), and behavioural functioning (e.g., Gordis, Margolin, & John, 2001) of bio-ecological model.

However, there is little acknowledgement of children's biological functioning in the context of numerous family interactions. This is most important when looking at the dominant role attributed to children's biological functioning in a household environment dominant of family menace (e.g., Boyce & Ellis, 2005; Repetti, Taylor, & Seeman, 2002). However, to identify the links of abnormalities in youngsters' biological functioning, it is imperative to explore whether risky family environment coupled with poor parental care predict child's adrenocortical reactivity to consistent, laboratory processes planned that provoke youngsters' anguish in inter-parental and child-parent interaction. Neurobiological frameworks explained the importance of comprehending the function of hypothalamic-pituitary-adrenal (HPA) axis stress response system in a domestic situations (e.g., Cicchetti, 2002; Repetti, Taylor, & Saxbe, 2007; Susman, 2006). This works as a means of organizing resources that tackle ecological risk and distress.

The results of HPA stimulation is glucocorticoid hormone cortisol. Therefore, an increase in cortisol stages which come as a result of ecological stressor aid the adaptive role of increasing cognitive handling of meaningfully important actions, and rally to invigourate and biological means to tackling the stressor (e.g., Gold & Chrousos, 2002; Gunnar & Quevedo, 2007). Also, inter-parental violence and unresponsive punitive parental behaviours are considered as noticeable ecological pathogens on children's behaviour because of their perniciousness on their security and welfare (Cicchetti & Rogosch, 2001; Margolin, 2005). Based on the stress-sensitive characteristic of the HPA axis, inter-parental violence coupled with parent's emotional unobtainability is a strong prognosticator of uniqueness in youngsters' adrenocortical functioning.

Stress Response System

The stress response system contains the Sympathetic Nervous System (SNS) and the Hypothalamic-Pituitary Adrenocortical (HPA). However, the tendency to concurrently establish a link between inter-parental, child-rearing risk factors and youngsters' cortisol functioning permits influential tests for two conflicting models of stress response. According to the work of Davies and Sturge-Apple, 2007, emotional security theory provides important ways to define the comparative practicability of broad stress and stress-specificity theory in a household. Emotional security is seen in an inter-parental and child-parent's interactions as the most important objective for offspring. Children with long histories of inter-parental problems developed poor emotional safety in such environment. Research suggests that experience spells of violence, hostility, and skirmish in a household is a strong threat to children well-being and increases fears about their security and safety in the family. On the other hand, EST suggests that maternal difficulties that promote poor attention, sensitive, and approachable parenting weaken children's confidence if they face any problem outside their home and no caring and reliable parents to help them (e.g., Cicchetti, Rogosch, & Toth, 1998; Levondosky & Graham-Bermann, 2000). Given its importance to family measures, emotional security theory offers theoretical outline that explain the unambiguousness between children with histories of inter-parental and child-parent rapport and biological reactivity paradigms that explain children's worries and safety in a household

The Interaction of Biological and Psychological Responses

Research linked the higher menace of both internalizing and externalizing difficulties in youngsters to dysregulation in the stress response system that comes with trauma-related experiences (Luecken & Lemery, 2004; El-Sheikh, Kouros, Erath, Cummings, Keller & Staton, 2009). Reports also show a significant correlation between augmented stimulations of the HPA axis, internalizing conducts, and undesirable long-standing physical health effects (El-Sheikh et al., 2001). Similarly, HPA axis is a probable trajectory for the result of high conflict on youngsters' coping reactions, and it clarifies some distinctness observed in their behaviour. According to Koss, George, Davies, Cicchetti, Cummings and Sturge-Apple, 2013, kindergarten- aged children demonstrate three patterns of cortisol fluctuation. For instance, a group displayed no variation between baseline, conflict, and resolve (11 percent), while another group exhibited a stable decline from baseline to resolve that in line with the diurnal rhythm of cortisol (77 percent), and last but not the least, the last group displayed a stable upsurge in cortisol levels (11 percent). Generally, this report confirms that there is no relationship between the cortisol levels and emotional security, or adjustment, which means that kids react to domestic violence or high risk environment in different manners. Children who displayed increasing cortisol during baseline, conflict, and resolve are more probable to poor managing processes, higher levels of observed risk, emotional, and behavioral dysregulation. Also, they are more probable to engage or interfere in the violence (Koss et al., 2013).

Conclusion and Recommendation

The impact of domestic violence on children's mental health is enormous. Studies continue to show that children who experience domestic violence or risky family environment developed social, emotional, and academic problems (Cummings & Davies, 2010). Although reports show numerous factors that influence child's adjustment, a well-established and reported experience documented is living in a domestic violence household. This prompts recent research on the probable effects of biological and psychological mechanisms that come as a result children witnessing parental conflict. Though, most studies illuminate the effect of children's exposure to risky family environment on cognitive development, surprisingly, it established that children witnessing domestic violence before the age of three, are more likely to develop memory impairment and poor cognitive functioning when they attain the age of five (Gustafsson, Coffman, Harris, Langley, Ornstein & Cox, 2013).

Years of empirical evidence also proves that children from domestic violence household environments developed both biological and psychological health problems in their teenage years and in early adulthood. What most of these studies failed to emphasize is the probable interaction between biological and psychological developments in young children. Yet, research continually argued that living in a risky family household, such as domestic violence impact negatively on child's stress response system, as well as the SNS and HPA axis. Lastly, research shows that child's emotional security is a pathway through which psychological process impacts on biological outcomes (Cummings & Davies, 2010). Thus, if a child is not emotionally secure, she/he will experience hypervigilance and a dysregulated stress response system that affects their sleeping ability and upsets other biological and psychological developments.

Direction for Future Research

One of the main objectives for impending research is to use ecological-transactional analysis to broaden the knowledge base on the significant interaction between biological processes like the SNS, HPA axis, sleep, and psychological outcomes of children exposure to domestic violence. To achieve these goals, the following recommendations are suggested:

1. Effort should be directed toward understanding the socio-ecological interaction between child's biological disposition and the fusion of risk and protective factors and family milieu.
2. Future research should focus more on epigenetics as this helps in comprehending the extent of relationship between biological and psychological processes, and other probable mechanism that come from living in a *risky family environment*.
3. Researcher should understand and investigate the biological (stress response, emotion regulation, sleep) and the role they play in triggering and aggravating undesirable psychological functioning that explain individual and group differences. This if managed, will help the practitioner and policy maker to identify *risky families*.
4. Also, professionals should identify strategies that will balance the child's needs with family confidentiality.
5. Lastly, practitioners working with children exposed to domestic violence must learn, and develop skills needed in providing crisis intervention, suitable assessment approaches and understanding child development, and trauma.

With the information above, professionals and other stake holders will be able to design strategies and ideas that not only meet the prevention and interference programme, but also change the trajectories of exposure to domestic violence.

References

- Barnish, M. (2004). Domestic violence: A literature review. *HM Inspectorate of Probation*. Downloaded from <http://www.homeoffice.gov.uk/justice/probation/inspprob/index>.
- Beauchaine, T. (2001). Vagal tone, development, and Gray's motivational theory: Toward an integrated model of autonomic nervous system functioning in psychopathology. *Development and Psychopathology*, 13(2), 183-214.
- Biersteker, L. & Robinson, S. (2000). Socio-economic policies: Their impact on children in South Africa. In D. Donald, A. Dawes & J. Louw (Eds.), *Addressing childhood adversity*, 26-59. Cape Town, SA: David Philip.
- Boyce W.T & Ellis B.J. (2005). Biological sensitivity to context: I. An evolutionary-developmental theory of the origins and functions of stress reactivity. *Development and Psychopathology*, 17, 271-301.

- Bradley, R. H., & Corwyn, R. F. (2002). Socio economic status and child development. *Annual Review of Psychology, 53*, 371–399.
- Bronfenbrenner, U. (1994). Ecological models of human development. *International Encyclopedia of Education, 3*(2). Elsevier: Oxford.
- Buckley, H., Holt, S. & Whelan, S. (2007) Listen to me! Children's experiences of domestic violence. *Child Abuse Review, 16*, 296-310.
- Carlson, B.E. (2000). Children exposed to intimate partner violence. *Trauma, Violence and Abuse, 1*(4), 321-342.
- Centers for Disease Control and Prevention. (2013). *The Adverse Childhood Experiences (ACE) Study*. Retrieved from <http://www.cdc.gov/ace/index.htm>
- Chapman, D. P., Liu, Y., Presley-Cantrell, L. R., Edwards, V. J., Wheaton, A. G., Perry, G. S., & Croft, J. B. (2013). Adverse childhood experiences and frequent insufficient sleep in 5 U.S. states, 2009: A retrospective cohort study. *BMC Public Health, 13*(3).
- Cicchetti, D & Toth, S.L. (2005). Child Maltreatment. *Annual Review of Clinical Psychology, 1*, 409-438.
- Cicchetti, D. (2002). How a child builds a brain: Insights from normality and psychopathology. In: Hartup, W.; Weinberg, R., editors. Minnesota symposia on child psychology: *Child psychology in retrospect and prospect, 32*. Mahwah, NJ: Lawrence Erlbaum Associates
- Cicchetti, D. & Rogosch F.A. (2001). The impact of child maltreatment and psychopathology upon neuroendocrine functioning. *Development and Psychopathology, 13*, 783–804.
- Cicchetti, D., Rogosch F.A. & Toth S.L. (1998). Maternal depressive disorder and contextual risk: Contributions to the development of attachment insecurity and behaviour problems in toddlerhood. *Development and Psychopathology, 10*, 283–300.
- Cicchetti D. (1996). Child maltreatment: Implications for developmental theory. *Human Development, 39*, 18–39
- Cicchetti D & Howes, P.W. (1991). Developmental psychopathology in the context of the family: Illustrations from the study of child maltreatment. *Canadian Journal of Behavioural Science, 23*(3), 257–281.
- Cummings, E. M., & Davies, P. (2010). *Marital conflict and children: An emotional security perspective*. New York: Guilford Press.
- Cummings, E.M., El-Sheikh, M., Kouros, C.D. & Buckhalt, J. A. (2009) Children and violence: The role of children's regulation in the marital aggression – child adjustment link. *Clinical Child and Family Psychology Review, 12*, 3–15.
- Cummings E.M, Schermerhorn A.C, Davies PT, Goeke-Morey M.C & Cummings J.S. (2006). Inter-parental discord and child adjustment: Prospective investigations of Emotional security as an explanatory mechanism. *Child Development, 77*, 132–152.
- Davies, P.T & Sturge-Apple M.L. (2007). Advances in the formulation of emotional security theory: An ethologically-based perspective. *Advances in Child Behavior and Development, 35*, 87–137.
- Davies, P. T & Cummings, E. M. (1998). Exploring children's emotional security as a mediator of the link between marital relations and child adjustment. *Child Development, 69*, 124-139.
- Dawes, A. & Donald, N. (2000). Improving children's chances: Linking developmental theory and practice. In D. Donald, A. Dawes & J. Louw. (Eds.). *Addressing childhood adversity*, 1-26. Cape Town & Johannesburg: David Phillip.
- Dembroski, T. M., MacDougall, J. M., Williams, R. B., Haney, T. L., & Blumenthal, J. A. (1985). Components of type A, hostility, and anger-in: Relationship to angiographic findings. *Psychosomatic Medicine, 47*, 219–233.
- Dodd, L.W. (2009). Therapeutic group work with young children and mothers who have experienced domestic abuse. *Educational Psychology in Practice, 25*, (1), 21-36.
- Donald, D., Lazarus, S & Lolwana, P. (2006). *Educational psychology in social context*. 2nd ed. Cape Town: Oxford South Africa.
- Duggan, S., O'Brien, M & Kennedy, J. K. (2001). Young adults' immediate and delayed reactions to simulated marital conflicts: Implications for inter-generational patterns of violence in intimate relationships. *Journal of Consulting and Clinical Psychology, 69*, 13-24.
- Dunn, J & Davies, L. (2001). Sibling relationships and inter-parental conflict. In: Grych, J.; Fincham, F., editors. *Child Development and Inter-parental Conflict*. New York: Cambridge University Press; 273-290.
- Edge M. D., Ramel W., Drabant E. M., Kuo J. R., Parker K. J., & Gross J. J. (2009). For better or worse? Stress inoculation effects for implicit but not explicit anxiety. *Depression and Anxiety, 26*, 831-837.
- Edleson, J.L., Mbilinyi, L.F., Beeman, S.K. & Hagemester, A.K. (2003). How children are involved in Adult Domestic Violence. *Journal of Interpersonal Violence, 18*(1), 18–32.

- El-Sheikh, M., Kouros, C. D., Erath, S., Cummings, E. M., Keller, P., & Staton, L. (2009). Marital conflict and children's externalizing behavior: Interactions between parasympathetic and sympathetic nervous system activity. *Monographs of the Society for Research in Child Development*, 74(1), 1-101.
- El-Sheikh, M., Harger, J. A., & Whitson, S. M. (2001). Exposure to inter-parental conflict and children's adjustment and physical health: The moderating role of vagal tone. *Child Development*, 72(6), 1617-1636.
- Fantuzzo, J., Boruch, R., Beriam, A., Atkins, M & Marcus, S. (1997). Domestic violence and children: Prevalence and risk in five major US cities. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 116-122.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Aritz, A. M., & Edwards, et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine*, 14, 245-258.
- Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Polyvictimization and trauma in a national longitudinal cohort. *Development and Psychopathology*, 19(1), 149-166.
- Frasure-Smith, N., Lesperance, F., & Talajic, M. (1995). The impact of negative emotions on prognosis following myocardial infarction: Is it more than depression? *Health Psychology*, 14, 388-398.
- Gabowitz, D., Zucker, M. & Cook, A. (2008) Neuropsychological assessment in clinical evaluation of children and adolescents with complex trauma. *Journal of Child and Adolescent Trauma*, 1, 163-178.
- Gerhardt, S. (2004). *Why Love Matters*. London. Routledge.
- Gerwartz, A.H. & edleson, J.L. (2007). Young Children's Exposure to Intimate Partner Violence: Gold, P.W & Chrousos G.P. (2002). Organization of the stress system and its dysregulation in melancholic and atypical depression: High vs low CRH/NE states. *Molecular Psychiatry*, 7, 254-275.
- Gordis, E.B, Margolin G & John R.S. (2001). Parents' hostility in dyadic marital and triadic family settings and children's behavior problems. *Journal of Consulting and Clinical Psychology*, 69, 727-734.
- Graham-Bermann, S. A. (2001). Designing intervention evaluations for children exposed to domestic violence: Applications of research and theory. In S. A. Graham- Bermann (Ed.), *Domestic violence in the lives of children*, 237-267. Washington, D.C: American Psychological Association.
- Grych, J. H & Kinsfogel, K. M. (2010). Exploring the role of attachment style in the relation between family aggression and abuse in adolescent dating relationships. *Journal of Aggression, Maltreatment & Trauma*, 19, 624-640.
- Grych J.H, Harold G.T & Miles C.J. (2003). A prospective investigation of appraisals as mediators of the link between inter-parental conflict and child adjustment. *Child Development*. 74, 1176-1193.
- Grych, J. H., Jouriles, E. N., Swank, P. R., McDonald, R & Norwood, W. D. (2000). Patterns of adjustment among children of battered women. *Journal of Consulting and Clinical Psychology*, 68, 84-94.
- Gunnar, M, & Quevedo, K. (2007). The Neurobiology of Stress and Development. *Annual Review of Psychology*, 58, 145-173.
- Gustafsson, H. C., Coffman, J. L., Harris, L. S., Langley, H. A., Ornstein, P. A., & Cox, M. J. (2013), *Intimate partner violence and children's memory*. *Journal of Family Psychology*, 27(6), 937-944.
- Hanson, M. D., & Chen, E. (2010). Daily stress, cortisol, and sleep: The moderating role of childhood psychosocial environments. *Health Psychology*, 29, 394-402.
- Hetherington, E.M & Kelly, J. (2002). *For better or for worse: Divorce reconsidered*. New York: W.W. Norton.
- Holden, G (2003) Children exposed to domestic violence and child abuse: terminology and taxonomy. *Clinical Child and Family Psychology Review*, 6(3).
- Holt, S., Buckley, H. & Whelan, S. (2008). The impact of exposure to domestic violence on children and young people: a review of the literature. *Child Abuse and Neglect*. 32, 797-810.
- Holtzworth-Munroe, A., Smutzler, N. & Sandin, E. (1997). A Brief Review of the Research on Husband Violence. *Aggression and Violent Behaviour*, 2(2).
- Humphreys, C. & Stanley, N. (eds) (2006) Introduction. In *Domestic Violence and Child Protection Directions for Good Practice*. London. Jessica Kingsley.
- Jenkins, E.J & Bell, C.C. (1997). Exposure and response to community violence among children and adolescents. In J. Osofsky, (Ed.), *Children in a Violent Society*. New York, Guilford Press.
- Jouriles E.N, Brown A.S, McDonald R, Rosenfield D, Leahy M.M & Silver C. (2008). Intimate partner Violence and preschoolers' explicit memory functioning. *Journal of Family Psychology*, 22(3), 420-428.
- Kershaw, C., Nicholas, S. & Walker, A. (2008). Crime in England and Wales 2007/08. Home Office Statistical Bulletin. London: Home Office. [Online] Available at: <http://homeoffice.gov.uk/rds/pdfs08/hosb0708.pdf>
- Kitzmann, K.M., Gaylord, N.K., Holt, A.R. & Kenny, E.D. (2003) Child Witnesses to Domestic Violence: A Meta-Analytic Review, *Journal of Consulting and Clinical Psychology* 71(2), 339-52.

- Koss, K. J., George, M. R. W., Davies, P. T., Cicchetti, D., Cummings, E. M., & Sturge-Apple, M. L. (2013). Patterns of children's adrenocortical reactivity to inter-parental conflict and associations with child adjustment: A growth mixture modelling approach. *Developmental Psychology, 49*(2), 317-326.
- Kubzansky, L. D., Kawachi, I., Weiss, S. T., & Sparrow, D. (1998). Anxiety and coronary heart disease: A synthesis of epidemiological, psychological, and experimental evidence. *Annals of Behavioral Medicine, 20*, 47-58.
- Leech, S. L., Larkby, C. A., Day, R., & Day, N. L. (2006). Predictors and correlates of high levels of depression and anxiety symptoms among children at age 10. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 223-230.
- Levendosky, A.A & Graham-Bermann, S. A. (2000). Trauma and parenting in battered women: An addition to an ecological model of parenting. *Journal of Aggression, Maltreatment, & Trauma, 3*, 25-35.
- Lewis, A. (2009). Assessing childhood trauma: A holistic perspective. *Child Abuse Research in South Africa, 10*(1), 14-26.
- Luecken, L. J. & Lemery, K. S. (2004). Early care giving and physiological stress responses. *Clinical Psychology Review, 24*(2), 171-191.
- Margolin G. (2005). Children's exposure to violence: Exploring developmental pathways to diverse outcomes. *Journal of Interpersonal Violence, 20*, 72-81.
- Margolin, G. and Gordis, E B, 2000, 'The effect of family and community violence on children', *Annual Review of Psychology, 51*, 445-479.
- Marshall, J. & Watt, P. (1999). Child behaviour problems: A literature review of the size and nature of the problem and prevention interventions in childhood, Perth, WA.
- Masten, A. S., & Reed, M. G. (2002). Resilience in development. In S. R. Snyder & S. J. Lopez (Eds.), *The handbook of positive psychology*. Oxford, England: Oxford University Press. The Interagency Committee on Children's Futures.
- Masten, A.S, Hubbard J.J, Gest S.D, Tellegen A, Garmezy N & Ramirez M. (1999) Adaptation in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology, 11*, 143-169.
- Mathias, J, Mertin, P, and Murray, A. (1995). The psychological functioning of children from backgrounds of domestic violence. *Australian Psychologist, 30*, 1, 47-56.
- McCloskey, L. A., Figueredo, A. J., & Koss, M. P. (1995). The effects of systemic family violence on children's mental health. *Child Development, 66*, 1239-1261.
- McGee, C. (1997). Children's experiences of domestic violence. *Child and Family Social Work, 2*, 13-23.
- McIntosh, J. (2009). Legislating for shared parenting: Exploring some underlying assumptions. *Family Court Review, 47*(3), 389-400.
- McIntosh, J.E. (2002) Thought in the face of violence: a child's need. *Child Abuse and Neglect, 26*, 229 - 241
- Mullender, A., Hague, G., Iman, U., Kelly, L., Mallos, E. & Regan, L. (2002) *Children's perspectives on domestic violence*. London.Sage.
- Osofsky, J.D. (1997). Keeping your children safe: The violence intervention program for children and families. New Orleans, LA: LSU Medical Center, Dept of Psychiatry
- Osofsky, J., Wewer, S., Hann, D., & Fick, A. (1993). Chronic community violence: What is happening to our children? *Psychiatry: Interpersonal and Biological Processes, 56*, 36-45.
- Peedicayil, A., Sadowski, L. S., Jeyaseelan, L., Shankar, V., Jain, D., & Suresh, S., (2004). Spousal physical violence against women during pregnancy, *BJOG, 111*, 682-687.
- Plomin, R., DeFries, J. C., Craig, I. W., & McGuffin, P. (Eds.). (2003). Behavioral genetics. Washington DC: American Psychological Association.
- Repetti, R, Wang S, & Saxbe D. (2007). Bringing it all back home: How outside stressors shape families' everyday lives. *Current Directions in Psychological Science, 18*, 106-111.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin, 128*, 330-366.
- Rivett, M. & Kelly, S. (2006), From awareness to practice: children, domestic violence and child welfare. *Child Abuse Review, 15*, 224-242.
- Rutter, M., & Sroufe, L.A. (2000). Developmental psychopathology: Concepts and challenges. *Developmental Psychopathology, 12*, 265-296.
- Rutter, J. (1997). Stand-up as interaction: Performance and audience in comedy venues. Unpublished Ph.D. thesis, University of Salford, England.
- Sbarra, D. A., Hasselmo, K., & Nojopranoto, W. (2012). Divorce and Death: A Case Study for Health Psychology. *Social and Personality Psychology Compass, 6*(12), 905-919.

- Sen, S., Kranzler, H. R., Krystal, J. H., Speller, H., Chan, G., Gelernter, J., & Guille, C. (2010). A prospective cohort study investigating factors associated with depression during medical internship. *Archives of General Psychiatry*, *67*, 557-565.
- Sternberg, K.J., Baradaran, L.P., Abbott, C.B., Lamb, M.E. & Guterman, E. (2006) Types of violence, age and gender differences in the effects of family violence on children's behaviour problems: a meta-analysis. *Developmental Review*. *26*, 89-112.
- Sturge-Apple M.L, Davies P.T., Winter M.A., Cummings E.M. & Schermerhorn A. (2008). Inter-parental conflict and children's school adjustment: The explanatory role of children's internal representations of inter-parental and parent-child relationships. *Developmental Psychology*. *44*, 1678-1690.
- Sturge-Apple, M.L, Davies P.T, & Cummings E.M. (2006). The impact of inter-parental hostility and withdrawal on parental emotional unavailability and children's adjustment difficulties. *Child Development*. *77*, 1623-1641.
- Sullivan, M., Egan, M. & Gooch, M. (2004). Conjoint interventions for adult victims and children of domestic violence: a program evaluation. *Research on Social Work Practice*, *14*(3).
- Sullivan, C. M., Juras, J., Bybee, D., Nguyen, H., & Allen, N. (2000). How children's adjustment is affected by their relationships to their mothers' abusers. *Journal of Interpersonal Violence*, *15*, 587-602.
- Susman, E.J. (2006). Psychobiology of persistent antisocial behavior: Stress, early vulnerabilities, and the attenuation hypothesis. *Neuroscience and Biobehavioral Reviews*, *30*, 376-389.
- Swart, E. & Pettipher R 2005. A framework for understanding inclusion. In: E Landsberg, D Kruger & N Nel (eds). *Addressing Barriers to Learning*. Pretoria: Van Schaik.
- Taylor, S.E., Eisenberger, N.I., Saxbe, D., Lehman, B.J., & Lieberman, M.D. (2006). Neural responses to emotional stimuli are associated with childhood family stress. *Biological Psychiatry*, *60*, 296-301.
- Taylor, S.E., Lerner, J.S., Sage, R.M., Lehman, B. J., & Seeman, T. E. (2004). Early environment, emotions, responses to stress, and health. *Journal of Personality*, *72*, 1365-1393
- Walker, E. A., Gelfand, A., Katon, W. J., Koss, M. P., Von Korff, M., & Bernstein, D., et al. (1999). Adult health status of women with histories of childhood abuse and neglect. *The American Journal of Medicine*, *107*, 332-339.
- Williams, L.M., (2003). Understanding child abuse and violence against women: A life course perspective. *Journal of Inter-Personal Violence*. *18*, 441.
- Wyman, P. A., Cowen, E. L., Work, W. C., Hoyt-Meyers, L., Magnus, K. B., & Fagen, D. B. (1999). Care giving and developmental factors differentiating young at-risk urban children showing resilient versus stress-affected outcomes: A replication and extension. *Child Development*, *70*, 645-659
- Zeanah, C., Danis, B., Hirshberg, L., Benoit, D., Miller, D., and Heller, S. (1999). Disorganised attachment associated with partner violence: a research note. *Infant Mental Health Journal*, *20*(1), 77-86