Long term effects of child abuse: lessons for Australian paediatric nurses

AUTHORS

Felicity James
RN, Paediatric Intensive Care Unit, The Children's Hospital at Westmead, Cnr Hawkesbury Road and Hainsworth Street, Westmead, NSW, Australia
Felicity.James@health.nsw.gov.au

Dr. Janet Green
RN, PhD
Course Co-ordinator Post Graduate Studies in Paediatric Nursing
University of Technology Sydney, 15 Broadway, Ultimo, NSW, Australia
Janet.Green@uts.edu.au

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ABSTRACT

Objective
Child abuse has short and long term consequences. Literature that explores the long term effect of child abuse on children has been reviewed.

Setting
Prevalence of the long term consequences of child abuse within the Australian paediatric population

Sample
The search utilised medical search terms of 'child abuse', 'long term effects', 'adverse childhood events', 'violence', 'cortisol response to stress', 'post-traumatic stress disorder', 'nurs*', 'paediatric', 'abuse', 'neglect' and 'prevention' in health related databases to locate literature published from 2007 until present.

Primary argument
Data concerning child abuse and neglect in Australian children is sparse and inconsistent with no literature found specifically relating to the role of paediatric nurses.

Conclusion
Further analysis on the effects of child abuse and neglect on Australian children will help to gauge its health burden on the country, and to help health professionals better understand this contemporary child safety concern.

INTRODUCTION

The purpose of this review is to examine the current research and evidence outlining how child abuse affects an individual over the long term. The aspects of abuse that will be explored include, physical, verbal and sexual within a broad range of socio-economic backgrounds and populations. This review will focus on the evidence surrounding long term effects of childhood abuse on physical and mental well-being, physiological changes from prolonged stress, tendencies towards substance abuse, nursing considerations and recommendations for how to reduce the occurrence of a child experiencing violence or abuse. After reviewing the current evidence on child abuse, including the immediate and long term effects, it was clear that this issue was extensive. Not only was it clear that direct abuse to the child was detrimental, but indirect forms of abuse through witnessing or hearing about violence towards others affected children in many ways. Mental health, substance abuse, poor physical well-being, difficulty forming relationships and impact on coping development are just a few of the recurring themes within the literature. As a result of child abuse and neglect, adults who have survived child abuse have the potential to suffer from prolonged socio-economic disadvantage. Registered nurses play a vital role in identifying children who are at risk of experiencing child abuse, however many nurses report a lack of knowledge and confidence on this topic, thus reducing their willingness to report any suspicions of abuse.

METHODOLOGY

The databases used for research include; Medline with Full text, EBSCO and CINAHL. The search terms included literature published from 2007 until present; and included the search terms 'child abuse', 'long term effects', 'adverse childhood events', 'violence', 'cortisol response to stress', 'post-traumatic stress disorder', 'nurs*', 'paediatric', 'abuse', 'neglect' and 'prevention'. Australian data was sourced in relation to child abuse and mental health statistics

CHILD ABUSE PREVALENCE

Child abuse encompasses a broad range of issues, and is defined as an act by the caregiver to intentionally do harm to the child (Klossner and Hatfield 2010). It can be delivered through physical domains, verbally, sexually, through household dysfunction including parental substance abuse, domestic violence, parental mental health issues and neglect (Austin et al 2016a and 2016b). The family unit is identified to have a significant impact on the prevalence of indirect and direct violence being experienced by a child. The experience of childhood abuse is influenced by environmental factors and demographics (Klossner and Hatfield 2010). Children who grow up in poverty, inadequate socialisation, diminished family support networks, parental mental health problems and substance abuse have shown to experience higher rates of adverse childhood experiences (Keane et al 2015). This type of environment is more likely to be experienced within the homeless and social housing population. Within Australia, 71% of the homeless population had experienced childhood trauma before turning 16 years old (Keane et al 2015). Socioeconomic status of the family, parental capabilities and stability in accommodation had a major impact on the child's increased risk to experience indirect violence such as, violence between parents, or violence towards another family member (Zimmerman and Posick 2016). The study conducted by Austin and et al (2016b) found that children with disabilities have higher incidence of experiencing adverse childhood events, especially sexual abuse from an adult. It is reported that children with disabilities experience sexual abuse three times more than a child without a disability. These children with disabilities who had experienced adverse childhood events, were also more likely to participate in unhealthy risk behaviours such as of smoking, and those which increased the risk of HIV (Austin et al 2016b). It appears that children who identify as lesbian, gay or bisexual later in life had higher incidences of experiencing more than one type of adverse childhood experience (direct or indirect abuse) compared

to the heterosexual population (Austin et al 2016a). Within this same study, Austin et al (2016a) found the homosexual population who had experienced child abuse had significantly increased rates of behavioural issues including substance use. In the United States of America (USA), the Centre for Disease Control and Prevention indicates that over 50% of adults have experienced abuse of some form (Salinas-Miranda et al 2015). Individuals who have been abused are more likely to engage in risk taking behaviours, such as excessive drinking as a coping mechanism. In the study conducted by Gospodarevskaya (2013), 8.3% of Australians had experienced some form of sexual abuse before the age of 21 years old. Within this same study, 40.2% of this Australian population met diagnostic signs and symptoms of Post-Traumatic Stress Disorder (PTSD) before the age of 18 (Gospodarevskaya, 2013). PTSD is a form of anxiety disorder characterised by a set of reactions that can develop in individuals who have been through a traumatic event which threatened their life or safety. Symptoms include flashbacks of the traumatic event, intrusive memories or nightmares, emotional numbing and heightened vigilance (Sane Australia 2016). According to the 2007 Australian Mental Health Survey, the average onset of PTSD occurred in children aged 11 years old. There is no doubt that all of these effects on a person's emotional and physical well-being has a negative impact on quality of life during adulthood.

PHYSIOLOGICAL STRESS RESPONSE TO TRAUMA

When the human body is exposed to traumatic and damaging experiences, a number of biological and physiological changes occur (Delima and Vimpani 2011). When a person is exposed to stressors, the biological response to stress is regulated through the sympathetic nervous system and the hypothalamic pituitary adrenal (HPA) system. During stress, the HPA system releases corticotropin releasing factor (CRF) from the hypothalamus, increasing secretion of adrenocorticotropin hormone (ACTH) from the anterior pituitary which creates glucocorticoid release from the adrenal (Bremner et al 2003). The release of these stress hormones, adrenaline and cortisol causes a cascade of immediate physiological effects. These signs and symptoms including, increased heart rate, increased respiratory rate, hypertension, vasoconstriction, increase blood glucose levels and increase in initial immune response (Carpenter et al 2011). In normal circumstances, once the stressor has been removed, the hypothalamus dictates for the stress response to dissipate, returning hormone function back to baseline. However, for people who experiences prolonged stress, the hypothalamus becomes damaged and is inhibited (Carpenter et al 2011). Long term activation of the stress response causes damage to the cardiovascular system due to persistent tachycardia and hypertension, increasing risk of stroke and myocardial infarction (Bremner et al 2003). Magnetic resonance imaging (MRI) has also shown evidence of accelerated depletion and metabolism of neurons, shearing of axons with hindering of neurogenesis in those who experience childhood trauma (Delima and Vimpani 2011). This prolonged activation of the stress response also causes damage to the structure and functional capacity of the brain including the hippocampus (Delima and Vimpani 2011). Damage to the hippocampus causes an inhibition to memory development and learning (Bremner et al 2003). It has been identified that children who experience prolonged stress early in life have an increased sensitivity of the noradrenergic system, which is consistent in the biological changes that occur in people with post-traumatic stress disorder (Bremner et al 2003). Chronic stress has been revealed to damage the process of naturally occurring dopamine and noradrenaline causing hypersensitivity, hyperarousal, mood disturbances and anxiety symptoms (Delima and Vimpani 2011). The study conducted by Carpenter et al (2011) explores the correlation between childhood trauma with neurohormonal and hypothalamic pituitary adrenal axis dysregulation. It is suggested that this dysregulation has a direct impact on an individual's immune system as seen by increased inflammatory markers of individuals with PTSD (Carpenter et al 2011). Deoxyribonucleic acid (DNA), is the hereditary material in humans. DNA methylation, or the epigenetic mechanism used by cells to control gene expression, may mediate persistent changes in gene function following chronic stress. These epigenetic alterations may contribute to the inflammatory and immune dysregulation observed in subjects with PTSD. (Smith et al 2011).

LONG TERM EFFECTS ON PHYSICAL HEALTH

Childhood abuse causes a life-time effect on an individual's physical well-being, causing serious harm. Within Australia, rates of foetal alcohol syndrome occurs in 0.68 in every 1,000 live births, with even higher rates among the indigenous population at 2.76 per 1,000 live births (Delima and Vimpani 2011). The exposure to high doses of alcohol while in utero is the earliest form of abuse, causing significant long term effects on the child once born. Through MRI imaging, it can be identified that children who are born with foetal alcohol syndrome have decreased brain size and thinning of the corpus callosum, inhibiting communication pathways from the left to right side of the brain (Delima and Vimpani 2011). Children with foetal alcohol syndrome also demonstrated functioning changes including, limited attention spans, low IQ, behavioural changes, difficulty with fine motor skills such as writing, inability for higher functioning, hyperactive and impulsive tendencies and poor judgement causing social deficits (Delima and Vimpani 2011). Delima and Vimpani (2011), further discuss the use of medical imaging, such as MRI, as a form of non-invasive diagnostic to illustrate the physical damage caused by other forms of childhood abuse. This damage can be seen through structural changes in the brain as well as behavioural changes (Delima and Vimpani 2011). MRI images also showed that children who suffered prolonged exposure to violence have decreased intracranial, cerebral and prefrontal cortex volumes. Problems in the pre-frontal cortex (reason, logic, problem solving, planning, and memory), amygdala (emotion) and hippocampus (learning and memory) associated with smaller brain volumes mean less neuron structure and have significant implications for learning (Hansen et al 2015).

Austin et al (2016a), reviewed the alarmingly high rate of adverse childhood experiences within the homosexual population and poor health in their adult life. The adverse childhood events include, physical, verbal, sexual abuse, violence within the family unit, substance abuse in the home, adults with mental illness, substance abuse and incarceration of a household member (Austin et al 2016a). Higher rates of asthma, cardiovascular disease and obesity have been reported in homosexual and bi sexual individuals. Not only does the individual experience higher rates of mental health issues related to abuse experiences, but there is also a link to diabetes, cancer, endocrine dysfunction, nervous system changes and increased mortality rates (Salinas-Miranda et al 2015). These effects on the body are chronic in nature and are often created as a result of higher incidences of risk taking behaviours, substance abuse and parental neglect (Klossner and Hatfield 2010). A direct link to mental health illness due to child abuse can contribute to the negative physical outcomes seen throughout the research.

LONG TERM EFFECTS ON MENTAL HEALTH

Epidemiological studies estimate that approximately one in every four young persons has experienced a traumatic event including abuse or violence (Gospodarevskaya 2013). These events may include direct violence directed towards them through personal victimisation or through witnessing a violent event occur to a friend, family member or within their household (Connor et al 2015). A traumatic event whether it is significant or frequent in nature can trigger stress responses that may or may not develop into post-traumatic stress disorder. Post et al (2015) explores the effects that verbal abuse alone can have on an individual's long term mental health. Childhood abuse, including physical and sexual, has been known to have a direct effect on early onset bipolar disorder and other mental health issues (Post et al 2015). The children within Post el al's (2015) study experienced verbal abuse and had a distinctly increased risk to developing bipolar disorder at an early age. Children who suffered from verbal abuse also had significantly higher risk of developing anxiety, substance abuse issues, rapid cycling between moods and more severe presentations of mania and depression. Hayashi et al (2015), found that children who experienced abuse including, sexual, physical, emotional and neglect, experienced a higher and more severe incidence of depression in adulthood. This may be related to

the possibility of abuse causing changes in personality development during the crucial developmental years of childhood through creating low self-esteem and poor confidence. The recovery process for children who develop PTSD from childhood trauma is up to 10 years. This is significantly longer than children with PTSD from accidents or disasters (Gospodarevskaya 2013). As a result of these long term mental health issues, it is no wonder that children who experience childhood abuse have higher tendencies to engage in substance abuse and develop addiction.

SUBSTANCE ABUSE

Childhood trauma causes a magnitude of emotional disturbances that profoundly increase the risk of engaging in risk taking behaviours such as substance abuse (Zimmerman and Posick, 2016). The study conducted by Elton et al (2015), illustrated a connection between childhood abuse sufferers and the influence it has on the addiction to cocaine. Alcohol abuse has also been widely identified as a coping mechanism for those who have suffered childhood trauma. Through the study of neuroadaptive responses to stress, Delima and Vimpani (2011), identify the use of alcohol and substances as a form of self-medication to reduce the hyperarousal symptoms of PTSD. Because of the numbing effect of alcohol and substances, children who experience abuse are more likely to partake in drugs, engaging in repetitive and compulsive use leading to addiction to deal with their stress (South et al 2015). The prolonged and abusive use of alcohol has shown to decrease hippocampal volume, affecting an individual's memory and cognitive ability (Delima and Vimpani 2011). Within Australia, among the homeless and social housing population, 43% of individuals meet the criteria for having a substance use disorder, with alcohol abuse being the most prevalent (Keane et al 2015). There is no doubt that the immediate effects of child abuse cause serious ramifications on a child's developmental stages (Seehuus et al 2015). A child who is exposed to multiple stressful situations means they are more likely to engage in risk taking behaviours, have higher incidence of addictive traits and utilise substances as a form of coping (South et al 2015).

THE ECONOMIC BURDEN

Child abuse and neglect has a huge economic burden for the individual and society. The 'direct' costs of child abuse and neglect include hospitalisation of injured children, psychological counselling and support for the victims of abuse and neglect. Direct costs include operating a child welfare system, the cost of law enforcement and the legal system necessitating family and juvenile courts (Gelles and Perlman 2012). The 'indirect' costs of child abuse and neglect are those costs associated with the consequences of abuse and neglect such as special education services and early intervention services to manage developmental and educational delays. Juvenile delinquency, adult criminal behaviour and adolescent/adult homelessness are also counted in the indirect costs (Gelles and Perlman 2012). Gelles and Perlman (2012) estimated the cost of direct and indirect costs of childhood abuse and neglect in the USA of the 1.2 million maltreated children in years 2005-2006 adjusted to 2012 dollars as $80,260,411,087. While this is data from the USA it does show how the costs can often be life-long.

Many of the consequences of child abuse and neglect may have an impact on the individual's subsequent economic productivity. Adults with histories of childhood abuse and/or neglect have been shown to have lower levels of education, employment, earnings, and fewer assets as adults (Currie and Spatz Widon 2010). Currie and Spatz Widdon (2010) suggest that the experience of maltreatment reduces peak earnings capacity by approximately $5,000 per year.

NURSING CONSIDERATIONS

Nursing a child who has experienced any form of abuse can be stressful and an emotionally draining experience for registered nurses. This type of situation raises many conflicts for nurses as they are educated to be professional and treat every patient and his/her family equitably. However, confronting the abuse of a child may present nurses with feelings of anger and distrust towards the caregivers who have instigated the abuse (Tingberg et al 2008). Nurses describe their ability to care for these families with emotional ambivalence where they may have very strong feelings of anger, however they present as professionals towards the family, which can prove to be extremely difficult. Tingberg et al (2008) explore this notion of nurses who want to provide the best care possible to their patients, and have as little contact with the parents or perpetrators as possible. This type of discord gives nurses feelings of dissatisfaction in this conflicting role and without appropriate strategies to deal with these situations, the risk of nurses burning out from the profession can increase drastically (Tingberg et al 2008).

Psychological support for nurses is vital when caring for abused children. This type of support can be provided in informal ways such as discussions about the situation with colleagues or as formal debriefing sessions or clinical supervision during an allocated time in the hospital environment (Chihak 2009). Being informed about what roles other authorities such as police, child protection unit and social workers have with cases of child abuse was another strategy that assists nurses in understanding the whole process of reporting and investigating instances of abuse. Nurses who were informed about the outcomes of reporting child abuse, even after the child was discharged from hospital, felt a sense of closure and considered themselves better prepared to care for abused children in the future (Tingberg, 2008). Hospitals and management must ensure that nurses feel supported while caring for children who have been abused. Providing follow up information about the outcome of the child and allowing nurses to have time away from the hospital environment to seek counselling services is paramount to ensure nurses have a decreased risk of feeling burnt out (Eveline et al 2012).

EDUCATION

There is no doubt that registered nurses have a legal obligation to report any signs of child abuse and neglect to the relative authorities. The factors that hinder a registered nurse from reporting include, experience, knowledge and confidence (Fraser et al 2009). Providing education for nurses is a key element in enhancing their ability to identify and report instances of suspected child abuse. Unfortunately, nurses show a major gap in their knowledge and ability to recognise child abuse, resulting in instances of child abuse not being reported and children left in vulnerable circumstances (Chihak 2009). As reported by Eveline et al (2012), without thorough and appropriate education for nursing staff, this barrier to reporting child abuse will increase. Throughout the literature it is very clear that nurses who had a lack of knowledge about signs and symptoms of child abuse, were also fearful about the misdiagnosis of child abuse and therefore being judged by the parents (Chihak 2009). Formal education sessions should be provided to all registered nurses regularly with content focusing on different types of abuse, symptoms of abuse, the mandated reporter and his/her role, the role of the bedside nurse, patient assessment, accurate documentation and steps to report suspected events of abuse (Eveline et al 2012). Education should also inform health professionals about the specific laws, hospital policies and procedures in place within the state they are working in. E-learning programmes have a much more positive impact on learning compared to didactic lectures as they increase learner participation, create engagement with the topic and improve learning through a more positive experience (Ward et al 2015). Smeekens et al (2011), discovered that emergency nurses who participated in e-learning programmes displayed higher levels of confidence and efficiency when assessing children for any signs of

child abuse. E-learning programmes should be utilised in addition to formal education sessions to ensure that nurses are becoming more aware of which children are at higher risks of experiencing child abuse and increase their knowledge and confidence (Ward et al 2015). It is clear that appropriate and concise education is a major benefactor in enhancing nurses' knowledge, confidence and understanding about the risk signs of children suffering abuse.

NURSING ASSESSMENT

As health care professionals, paediatric nurses in Australia, have a duty of care to be mandatory reporters of suspicion of child abuse. Assessing a child's risk for experiencing abuse is a vital part to preventing mistreatment and adverse childhood events in the future (Van der Put et al 2016). It is expected that Registered nurses will be able to identify children at risk of experiencing abuse, including the signs and symptoms of physical, sexual and psychological abuse. Nurses have a responsibility to conduct age and culturally-appropriate assessments on their patients and their families to identify these risks (Chihak 2009). Emergency nurses are often the first persons to interact with patients and their families, putting them in an advantageous position to assess a child and his/her family for signs of child abuse (Keane and Chapman 2008). Introducing mandatory child abuse screening tools into emergency departments have proved to be an effective way for nursing staff to identify risk factors and have the confidence to provide evidence behind their reports (Eveline et al 2012). In the study conducted by Eveline et al. (2012), a mandatory screening tool was introduced to an emergency department known as the 'escape form'. This form was presented to nurses alongside face to face teaching sessions about appropriate use of the form and screening each child that presented to emergency for signs of abuse. The form consisted of 6 questions identifying warning signs of child abuse and if any signs were marked then the physician must be notified to evaluate that child's risk of experiencing abuse. After using this checklist for a prolonged period of time, nurses reported they had a better understanding about the risk factors of child abuse and had more confidence when presenting suspicions to other nursing and medical staff (Eveline et al 2012).

When conducting the nursing assessment, a thorough physical examination should be conducted, looking for any bruising, abrasions, burns or marks that may not be conducive to the story given by the caregivers on presentation (Klossner and Hatfield 2010). If necessary, photographs should be obtained of the child with accurate, objective documentation in the medical notes being aware that these may be required in a court of law (Dixon and Crawford 2012). Observing the child and his/her interaction with his/her caregivers is another important element in identifying a potential abusive environment. There are a large array of signs that may assist the nurse in identifying child abuse or neglect (Klossner and Hatfield 2010). These signs may include, the child isolating himself/herself withdrawing from his/her caregiver, depressive symptoms, attention seeking, abnormal separation anxiety, poor school attendance, substance abuse, quick to anger and increased anxiety (Dixon and Crawford 2012). As a nurse, maintaining a professional and non-judgemental relationship is paramount. It can be difficult and can cause emotional distress to the nurse and medical team treating the child (Klossner and Hatfield 2010). Seeking appropriate support networks is important for nurses and doctors to be able to continue caring for children who have experienced child abuse.

PREVENTATIVE MEASURES

Children who experience one type of violence are more likely to experience another type and more frequently (Zimmerman and Posick 2016). Identification of these youths at risk is important in order to prevent further incidents of violence occurring. Zimmerman and Posick (2016) suggest education of community members and professionals on how to identify and assist these youths with their needs. Strategies to assist in preventing

incidences of violence include school initiatives based on strategies to de-escalate and avoid violent situations and coping mechanisms for indirect experiences of violence. Addressing the child's household stability is a crucial factor in preventing recurrences of direct and indirect violence. Zimmerman and Posick (2016), spoke about the need for creating safe and nurturing family environments as well as participation in community extracurricular activities. Youth organisations that aim to provide a safe, social and productive environment, assist young people to engage with others in a positive manner and thereby decreasing the likeliness to be involved in violent situations (Zimmerman and Posick 2016). McMillin et al (2016), suggests a key preventative measure in decreasing rates of child abuse comes from the appropriate education to parents about child development and milestones. The research suggests that parents with poor education on childhood development are more likely to engage in child maltreatment as they believe their child should be reaching much higher milestones than appropriate for their age (McMillin et al 2016). They then engage in physical punishment of their child when they do not perform as expected due to frustration, impatience, or inappropriate expectations of development milestones (McMillin et al, 2016). This trend is significantly higher for children with disabilities, at a rate of 3 to 4 times higher incidence of physical abuse among this population. Post et al (2015) recommends family-based treatments with an emphasis on psychoeducation, intra-family communication and education on coping mechanisms to ensure parents do not convert their frustration into aggressive behaviours. The study by Zimmerman and Posick (2016), concluded that perhaps indirect exposure to violence (witnessing violence or abuse) is more conducive to the household environment, meaning that a child who is raised in a loving, warm and nurturing household with effective communication and encouragement in developmental activities has a far less likely risk of experiencing violence.

CONCLUSION

Childhood abuse causes a manifestation of mental, emotional and physical health issues over the lifespan (Seehuus et al 2015). The literature research has found there is a vicious cycle that children who experience abuse face in life. Typically children who experience violence, abuse or neglect have caregivers that experienced this themselves in childhood (Zimmerman and Posick, 2016). Dysfunctional families and households that are unable to cope with stressors in life create dysfunctional environments for their children to grow up into. This causes a cascade of emotional insecurities, disruption to crucial developmental stages and triggers of stress. All of these factors attribute to the increased risk of mental health illness and substance abuse tendencies that have negative ramifications on the child's physical health throughout his/her lifetime (South et al 2015). Various preventative measures can ensure that incidences of violence, child abuse and neglect are decreased. Education for parents is reported as one of the most effective strategies to prevent abuse (McMillin et al 2016). As healthcare professionals, nurses play a vital role in identifying children at risk of abuse. As mandatory reporters of child abuse, it is paramount that nurses have an in-depth knowledge base about the risk factors as well as signs and symptoms of child abuse. Currently nurses are reporting a lack of confidence and knowledge base, hindering them from reporting suspicious presentations (Keane and Chapman 2008). Quality education that is tailored to nursing staff, including e-learning programmes and abuse screening checklists, can dramatically improve knowledge and confidence to report any suspicions of child abuse (Eveline et al 2012). Caring for children who have experienced any form of abuse can be emotionally draining for nursing staff. It is important for nurses to care for themselves through seeking emotional assistance and attending debriefing sessions in order to continue to care for children who have experienced abuse in the future. Lastly, nurses must maintain and provide professional, non-judgemental care in order to allow the child to feel safe and nurtured while in the hospital environment (Klossner and Hatfield, 2010).

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