Child Maltreatment of NICU Graduates: Focus on Health Disparities

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The National Perinatal Association (NPA) is an interdisciplinary organization that strives to be a leading voice for perinatal care in the United States. Our diverse membership is comprised of healthcare providers, parents & caregivers, educators, and service providers, all driven by their desire to give voice to and support babies and families at risk across the country.

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Abstract

Purpose: The purpose of this article is to highlight the maltreatment of NICU infants as a public health concern resulting from health disparities. Description: The article provides evidence that NICU infants are represented in the highest maltreatment group and fatal neglect group. Similarly, mothers are the highest reported group for maltreatment. This crisis is viewed through the lens of health disparities. The health disparities for the infant, mother, and health system are discussed and how these disparities increase maltreatment risks and poor outcomes. Assessment: Health disparity gaps need to be addressed in order to improve maltreatment and morbidity outcomes with an emphasis on maternal-infant attachment. Conclusion: NICU providers and child welfare professionals need to understand the health disparities that lead to poor outcomes. Similarly, providers must address the health-related disparities for infants, maternal mental health disparities, and system gaps that leave mothers and infants vulnerable.

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Introduction

Child maltreatment continues to be a public health concern [Department of Health and Human Services (DHHS) 2019] with estimated costs totaling $80 billion (Gelles & Perlman, 2012). The maltreatment rate for infants (under one year of age) continues to be specifically the highest at 25.3 per 1,000 (DHHS, 2019). Also, infants under the age of one die from abuse and neglect at a rate of 21.9 per 1,000 children in that population, which is three times the death rate for children one year and over. This article views child maltreatment of newborn intensive care unit (NICU) infants as a health disparity. Attachment theory is the theoretical lens used for this discussion and represents the strongest associated theory for child maltreatment of NICU infants.

NICU graduates are at a very high risk of maltreatment post-discharge due to disrupted maternal-infant attachment, infant characteristics, medical status, and NICU environment. This article focuses solely on maternal-infant maltreatment based on findings related to maternal perpetrators.

Background

Child welfare reports, medical, and nursing journals are examined. The population characteristics for child maltreatment, subpopulation for fatalities, and perpetrator groups are extracted. The salient factors for child maltreatment are identified related to the infant, mother, and NICU environment. In this article, neglect is defined as the failure of caregivers to provide needed, age-appropriate care, and medical care when resources are available or offered (Children's Bureau, 2019). The findings support that health disparities play a significant role in child maltreatment outcomes for NICU graduates. It should be noted that although there are no specific child maltreatment studies for NICU infants specifically, these infants are represented in the highest risk and fatality risk group, particularly African American infants.

Disparities

Healthy People 2020 define health disparities as the differences in health that are closely linked to social, economic, and environmental disadvantage (HealthyPeople.gov, 2019). A health disparity is a health outcome seen at a greater or lesser magnitude between populations. Health disparities adversely affect populations that systemically experience greater health obstacles based on race, ethnicity, religion, socioeconomic status, gender, age, mental health, cognitive, sensory, or physical disability, sexual identity, gender identity, geographic location, or other characteristics linked to discrimination and exclusion (HealthyPeople.gov, 2019). Health disparities are influenced by socioeconomic status, discrimination, biological and genetic characteristics, health behaviors, environment, and quality of care (Save the Children Foundation, 2015).

The cost of health disparities is approximately $229 billion in direct costs and 1.24 billion dollars in indirect medical costs [Association of State and Territorial Health

Officials (ASTHO), 2018]. Furthermore, 30% of indirect medical costs are considered excess expenditures due to health inequities experienced by African Americans, Asians, and Hispanics. Overall, children of color are over-represented in the child welfare system, given their numbers in the general population (Children's Bureau, 2017; Gourdine, Smith, & Waites, 2015).

The financial costs, however, cannot measure the disrupted lives, pain, suffering, and loss of life. According to the National Child Abuse and Neglect Data System (NCANDS), there are 674,000 victims of abuse and neglect, a rate of 9.1 victims per 1,000 children in the population (DHHS, 2019). Neglect comprises a majority (74.9%) of child maltreatment cases, followed by physical abuse (18.3%), and sexual abuse (8.6%) [DHHS, 2019]. Child fatality rates according to race are White (41.9%), African American (31.5%), and Hispanic (15.1%). The rate of African American child fatalities is 2.6 times greater than the rate of White children and 3.1 times greater than the rate of Hispanic children (DHHS, 2019). There is a public health consequence of greater magnitude experienced by African American children.

According to the Centers for Disease Control and Prevention (CDC), the preterm birthweight rates increased for the third year (CDC, 2019). Low birth weight rates are also increasing (8.2 per 1,000 births) and are within the highest rates ever reported. For children under the age of 5, mortality rates are improving while disparities and inequalities are worsening (Save the Children Foundation, 2015). In 2015, the preterm birth and low birthweight rates based on race for all births was African American 13.4%, Puerto Rican 11%, Indian-Alaska Native 10.5%, Cuban 9.3%, Mexican American 8.9%, Whites 8.9%, and American, Asian-Pacific Islander 8.6% (Childstats.gov, 2018). There are disparate preterm and low birth weight outcomes for the infant population overall, but there are higher incidences for African American infants.

The U.S. infant mortality rate continues to be relatively high, signaling less improvement despite technological advancements. In 2016, the infant mortality rate was 5.9 per 1,000 infants (Childstats.gov, 2018). The infant mortality rate is 2.4 times greater for African Americans than White infants (ASTHO, 2012). In 2014, the infant death rate per 1,000 live births was African Americans 10.9, American Indian-Alaskan Native 7.7, Puerto Rican 7.2, Whites 4.9, Mexican 4.8, and Cuban 3.9 and Asian Pacific Islander 3.7 (Childstats.gov, 2018). The burden of disease experienced by infants is clearly seen to a greater extent with African American infants.

Children who are poor and live in major cities have an extremely high risk of death (Save the Children Foundation, 2015). Systematic poverty is one of the critical indicators of disparities and poor maternal-infant health outcomes. Health disparities experienced by women and infants of color are a result of the burden of disease due to social determinants of health and in inequities experienced in larger environments (Save the Children Foundation, 2015). As African American women and infants have higher preterm birth rates and infant mortality rates, there are special implications for African American preterm, low-birthweight infants. Health disparities clearly exist in health outcomes for women and infants and to a larger and greater extent with African Americans. Ironically, these disparities can result in a NICU admission, influence the outcomes of a NICU admission, and increase the risk of maltreatment post-discharge.

Infant Health Disparities

The medical needs of NICU infants provide evidence of health disparities, particularly for minority groups. The health status of NICU infants also highlights the social determinants of health that lead to health disparities. The risk factors for physical abuse of infants include a child being under the age of 18 months, prematurity, and twinship (Friedman et al., 2012). Similarly, Fallon, Ma, Allan, Pillhofer, Traocme, & Jud, (2013) identify positive toxicology results at birth, fetal alcohol effects (FAE), developmental delays, attachment issues, and physical-neurological impairments (i.e., physical, cognitive, development) as infant risk factors for abuse. NICU infants are often premature with low birthweights. Their medical status puts them at higher risk of developmental delays and chronic conditions resulting from premature, low birth weight status and NICU stays that require special follow-up care. In addition, there are subgroups of NICU infants (i.e., substance-exposed, special needs) who can have additional medical needs after discharge. NICU infants can have cognitive and sensory impairments, physical disability, biological or genetic characteristics that influence health disparities. Similarly, the health behaviors of mothers (i.e., alcohol, substance use) can lead to a NICU admission. Subsequently, these health disparities increase disparate outcomes for child maltreatment.

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In considering the fragile health status of NICU infants in the first year of life, the risks involved the NICU course, and the child welfare data, there is a greater indication and concern for maltreatment. According to the most recent maltreatment data, infants (including NICU infants) are represented in the highest maltreatment and fatality group (DHHS, 2019). As the child fatality rate is higher in African American infants, these infants require considerable attention for maltreatment risk in the NICU.

The medical needs of a NICU infant are complex. Conceptualizing child maltreatment (i.e., neglect, medical neglect, physical) is also complicated because of the complexities and difficulty required to parent and care for these very fragile infants. The risk for neglect, medical neglect, and poor outcomes are high, leaving little room for parent caretaking errors. Similarly, it may be hard to determine if harm and injury are from maltreatment or mishandling of an extremely fragile infant. In considering social determinant variables such as poverty, substance use, and domestic violence, the outcomes become more abysmal.

Maternal Health Disparities

Maternal mental health factors affect health disparity and increase the risk of child maltreatment. Parents are highly represented as perpetrators of neglect, with maternal neglect exceeding paternal neglect at 37% and 19%, respectively (Bundy-Fazioli and Delong Hamilton, 2013). In a recent report, 30% of mothers, 15% percent of fathers, and 20% of mothers and fathers together are involved in fatal child maltreatment (DHHS, 2019). More than half (54.1%) of abuse and neglect perpetrators are women; in 80% of child fatality cases, the identified perpetrators are parents (DHHS, 2019). Damashek, McDiarmid, Nelson, & Bonner (2013) identify child neglect and fatal neglect perpetrators as predominantly female and biologically related to the victim.

The risk factors in infant-related child welfare investigations include caregivers between the ages of 20 and 30, caregivers as domestic violence victims, caregivers with minimal supports, and caregivers with mental health, substance abuse, and alcohol abuse issues (Fallon et al., 2013). Additional risk factors include caregivers with histories of out of home placements as a child, cognitive impairments, and physical health concerns (Fallon et al., 2013). The cited fatal risk factors by states include substance use, financial problems, and domestic violence (DHHS, 2019). Mothers in the NICU systemically experience mental and physical health obstacles that influence health disparities. Similarly, social determinants such as substance use and domestic violence are social determinants that can exacerbate discriminatory and exclusionary practices by medical and service providers, further reinforcing health disparities and adverse child maltreatment outcomes.

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Mothers who engage in child maltreatment may be a victim of their own childhood abuse and trauma, resulting in cumulative trauma. The findings from the Adverse Childhood Experience Study (ACES) demonstrates the effects of cumulative trauma on mental and physical health (Felitti et al., 1998; Grasso et al., 2012). Adults, in the ACES study, report a childhood history that includes adverse childhood experiences and maltreatment, parental impairments, and household dysfunctions (Felitti et al., 1998; Grasso et al., 2012). The severity and progression of physical and mental morbidity increases as the adverse experiences increase (Felitti et al., 1998; Grasso et al., 2012).

Mothers, who are often the perpetrators for abuse, may have historic trauma stemming from childhood experiences. Mothers who are involved in child maltreatment incidents can also be victims of child maltreatment themselves. Equally concerning, the children experiencing child maltreatment from these mothers develop their own ACES and are at high risk of continuing the maltreatment cycle. The ACES study provides evidence that social determinants increase mental-physical impairments, substance use, poor health outcomes, and early mortality. Mental health obstacles for NICU mothers are associated with adverse parenting outcomes and, ultimately, disparate child maltreatment outcomes.

A mother's childhood trauma can be compounded by the stress in the NICU. Parents in the NICU experience high levels of stress while their infants are in the NICU (Tandberg, Sandtro, Vardal, & Ronnestad, 2013). Also, stress-related trauma disrupts anticipating parenting norms. Parents define the NICU experience as ongoing uncertainty and lack of capacity in their parenting role (Lasiuk, Comeau, & Newburn-Cook, 2013). Stress, feelings of helplessness, absence of parenting knowledge, and negative child-interaction influence misperceptions about the infant, resulting in difficult parent-child interactions (Melnyk et al., 2005). The negative parent-child trajectories that initiate in the NICU result in poor parenting outcomes (Melnyk et al.,2005)

The stress endured by parents in the NICU causes mental health and cognitive impairments resulting in disparities in parenting outcomes. Parents experiencing a NICU admission have an increase in psychological stress have increased symptoms of intrusion and avoidance and a higher risk of post-traumatic stress disorder (PTSD) resulting from untreated stress (Jotzo & Poets, 2005). These emotional impairments of NICU parents have long-term, adverse impacts on parental self-confidence and parenting. These mental health challenges can endure well after their infants' discharge (Jotzo & Poets, 2005).

Postpartum depression (PPD) is another mental health challenge for NICU mothers. NICU mothers are at significant risk for devel-

oping PPD (Bergstrom, Wallin, Thomson, & Flacking, 2012). A study found that some NICU mothers experience PPD for up to 4 months post-discharge (Bergstrom, Wallin, Thomson, & Flacking, 2012). There is a correlation between maternal depression and attachment. Depression diminishes parenting skills and influences later behavioral difficulties in children (Bergstrom, Wallin, Thomson, & Flacking, 2012). Maternal depression is associated with committing physical abuse, psychological aggression, and medical neglect (Conron, Beardslee, Koenen, Buka & Gortmaker, 2009). Maternal child maltreatment perpetrators, who experienced an onset of depression, were at an increased risk of committing 2.3 more psychologically aggressive acts in a 12-month period than mothers who did not experience an onset of depression (Conron et al., 2009). There are mental health disparities experienced by NICU mothers. These mental health disparities for NICU mothers negatively impact parenting outcomes and increase child maltreatment health disparities.

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Another study found that mothers with a history of childhood abuse (i.e., emotional and physical neglect, emotional and physical abuse, sexual abuse, and severe abuse) are ambivalent in seeking professional help due to shame (Muzik et al., 2013). The postpartum period is identified as a time of increased awareness by mothers of impairments in social skills that were never learned prior to having an infant (Muzik et al., 2013). Mothers experience confusion about infant's routines, childcare needs, and acknowledged uncertainty about appropriate responses to their infant (Muzik et al., 2013). The childhood experiences of mothers undermined their parental intuition and sensitivity (Muzik et al., 2013).

Unfortunately, mothers do not receive needed support and are subject to provider bias. A study examining the attitudes of maternal neglect perpetrators discovered that mothers often have psychological challenges associated with childhood trauma, mental illness, substance abuse, and unmet support needs (Bundy et al., 2013). The study concludes that mothers were challenged with overwhelming psychosocial constraints; professional service providers often misunderstood their behaviors or observed these behaviors out of context. Even more concerning, the mothers in the study discussed voids in relationships with child welfare service providers, lack of respect, and mutual trust (Bundy et al., 2013).

Based on provider misperceptions, the necessary therapeutic, supportive relationships required for effective intervention often failed to develop. The quality of provider services and biases in the delivery of services result in disparate treatment in child maltreatment outcomes. Similarly, Gourdine, Smith, & Waites (2015) demonstrate instances in which child welfare workers were resistant or reluctant to address family needs. Their study highlights the need to evaluate and measure provider services to ensure racial equity and avoid policies and practices that have unintended consequences for families of color. There is evidence of child maltreatment service gaps. Service gaps, discriminatory, and exclusionary practices provide evidence of the quality of care challenges that influence health disparities. Quality of care threats for a complex, high-risk population in tandem with the deprivation of needed support services for mothers, who have mental health challenges, are the health disparities that result in maltreatment outcomes.

NICU Disparities

Experiences with NICU staff can compromise bonding and attachment. One study found that NICU mothers felt restricted when caring for their infants and felt their infant's needs were not met based on workflow and assignments (Sheeran, Jones, & Rowe, 2013). NICU mothers also reported that they do not feel that they received complete, comprehensible, and consistent information about their infants. Similarly, NICU policies and procedures were perceived as restrictive, resulting in mothers feeling excluded from the decision-making process (Sheeran et al., 2013). These challenges were heightened with adolescent mothers experiencing power struggles with staff when parenting their infant. Adolescent mothers reported feeling like outsiders being constrained from providing care and parenting (i.e., bathing, feeding, holding) with the need to obtain permission from NICU nurses (Sheeran et al., 2013). This study highlights the quality of care issues experienced by mothers that influence health disparities and child maltreatment outcomes.

Since there are extreme fear, trauma, and stress associated with parenting an infant in the NICU, providers need to teach parents infant avoidance cues and how to respond to their infant appropriately (Bader, 2012). NICU and medical providers are encouraged to motivate parents to touch their infants and educate parents on how to interact with their infant in order to improve infant brain development (Bader, 201). Auditory, Tactile, Visual, and Vestibular (ATVV) is one method that can be taught to parents. ATVV intervention is a developmentally appropriate, sensory stimulus technique that can be taught that involves a mother's voice, rocking, moderate touch/stroking, and maternal eye contact (White-Traut, 2015). It is believed that this technique improves the stressful NICU environment by mitigating noise and improving long-term neurodevelopmental outcomes for the infant (White-Traut, 2015). These practices can reduce parent's stress and increase their confidence in completing (Bader, 2012) and improve parenting interaction and parenting skills (White-Traut, 2015).

Health disparities, related to NICU provider care, disrupt bonding and attachment, increasing maltreatment risks. Approximately 66% of received child maltreatment reports are from professionals (DHHS, 2018). However, there are a lot more professionals can do to prevent child maltreatment. Equal priority is not given to infant development, bonding-attachment, and education with NICU families to improve child maltreatment outcomes. This is an important point for NICU providers and lifesaving for NICU infants. Acute medical needs take priority over bonding, attachment, and inclusionary practices. Bader (2012) identifies the role of NICU providers as expanded to include more than life-saving practices. Proprioceptive input, positive touch, and infant massage are recommended to minimize infant stress and improve parenting outcomes (Bader, 2012).

Discussion

Based on the definition of health disparities, infant maltreatment, and mortality data results, maltreatment of NICU graduates is a health disparity with increased risks for infants of color. Reducing health disparities and achieving health equity is possible based

on the literature findings and the statistical data discussed. The recommended solutions include policy, practice, and research.

It is challenging to overcome child maltreatment health disparities without awareness. Future policy direction includes increased awareness about health disparities and the heightened risk to NICU graduates. The data demonstrates that there needs to be more education on maternal-infant risk factors. This is a population in need of child maltreatment prevention and intervention efforts in pregnancy for women at increased risk for NICU admissions. Perinatal social workers need to highlight these child maltreatment health disparities for NICU infants.

Similarly, perinatal social workers must educate other NICU providers and families of the health disparities that lead to child maltreatment NICU infants. Besides, provider education needs to emphasize the equal importance of NICU policies and practices that encourage maternal-infant attachment and bonding as a health equity strategy. NICU providers need more education about how unaddressed maternal mental health needs contribute to health disparities and increase risks for child maltreatment post-discharge. Obstetrical-gynecological departments need increased awareness to improve mental health screenings for mothers at their prenatal and post-partum follow-up.

Policy goals include improving mental health support & closing gaps in child welfare services for the complex challenges of NICU mothers. Mental health support funding needs to be directed toward on-going education for mothers, families, and NICU providers. Additional resources can increase access to clinical social workers, psychologists, and home visiting support programs for ongoing education and support for post-partum mothers. In addition, mental health education and referrals can be made for mothers who continue to require mental health support post-discharge. This can help decrease child maltreatment health disparities related to mental health risks.

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NICU policies need to be reviewed and developed to elevate attachment-bonding as life-saving interventions commensurate with NICU clinical care. The policies that need to be considered include staffing, family visitation, infant care schedules, nursing schedules, family involvement, NICU environment, attachment-bonding opportunities, parent support services, parent and staff training, and education. In detail, NICU administrators need to ensure that the appropriate staff (i.e., social workers, psychologists, peer specialists) are present and available to support the needs of NICU mothers. It is important to review NICU clinical routines and family involvement with an emphasis on equitable delivery of medical care and family attachment-bonding. In addition, policies should include post-discharge outcomes, data, and research specific to child maltreatment, bonding, and attachment outcomes.

Research Direction

There are a few research articles that examine child maltreatment outcomes for NICU graduates. One research study examined child maltreatment of infants using an attachment-based approach. This study examined child maltreatment outcomes and breastfeeding duration (Strathearn et al., 2009). This study found that out of 7,223 infants, 10.8% (780) were reported to child protective services (Strathearn et al., 2009). A total of 7.1% (512) of infants received substantiated maltreatment incidents (Strathearn et al., 2009). Consistent with current child maltreatment statistics, this study cited more than 60% of substantiated cases involving maternal perpetrated child maltreatment (DHHS, 2019). The study concluded an inverse relationship between maltreatment and breastfeeding, where maltreatment increased as breastfeeding duration decreased. Also, children with no child maltreatment reports were more likely to be breastfed for at least four months.

Further research is needed to analyze attachment-based intervention and maltreatment outcomes for NICU infants. In addition, more research is needed to examine the correlation between health disparities and child maltreatment outcomes. The NICU experiences of mothers need further exploration. African American women and infants require special research attention based on their disproportionate outcomes and infant fatality outcomes. Similarly, more research is needed to examine the mental health status of mothers as it relates to outcomes for NICU infants.

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Conclusion

Child maltreatment continues to be a public health concern, and risks are higher for NICU graduates. Child maltreatment needs to be viewed through the lens of health disparities. Health outcomes must be improved for infants and mothers with an emphasis on African Americans infants and mothers. Medical providers and professionals must improve child maltreatment health disparities in the NICU population. NICU mothers must be connected to mental health and ongoing support services. NICU departments must evaluate their policies and practices to reduce gaps in service, discriminatory, and exclusionary practices. Professionals must consider their role in child maltreatment outcomes and respond with preventions.

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Disclosure: The National Perinatal Association www.nationalperinatal.org is a 501c3 organization that provides education and advocacy around issues affecting the health of mothers, babies, and families.

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