The Connection Between Developmental Delays and Mental Disorders After Spending a Significant Amount of Time in the Neonatal Intensive Care Unit (NICU) as a Neonate

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Abstract

In this paper, it will be explained why infants are admitted into the Neonatal Intensive Care Unit, developmental delays and how many times premature infants who spend time in the NICU will develop them, mental disorders and why many NICU babies will develop some sort of mental condition in their lifetimes, as well as what hospitals are doing to attempt to avoid and prevent these conditions to develop in the infants that are in the NICU’s.

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Studies have shown that the first few months of an infant’s life is crucial for forming emotional attachments and bonds with their parents. However, when an infant is born pre-term and has to spend a significant amount of their early life in the Neonatal Intensive Care Unit (NICU), they are not able to get the crucial bonding time, on top of being at risk of abnormal brain development as result of their premature birth. These high risks of abnormal brain development, as well as being unable to form bonds early on in their life, can result in developmental delays as well as mental disorders in these infants as they grow into school aged children. Hospitals have started implementing rules and regulations to try to combat these things for infants in the NICU, however some hospitals have not implemented these regulations and have even started charging parents money to hold their premature babies to make a profit rather than for the infant’s wellbeing.

# Why are infants admitted to the NICU?

In the United States alone, 10-15% of infants are admitted to the NICU per year, which is roughly half a million infants. Admission to the NICU can be for a wide number of reasons, but the most common reasons are low birth weight and prematurity. Specific reasons for low birth weight have not been able to be explained, as it can be caused by many different factors. However, some of the reasons that have been linked to low birth weight are mothers who go into labor early due to stress on the reproductive system; many mothers carrying multiples will give birth to infants with low birth weight because the unusual amount of stress placed on their body causing them to give birth prematurely. Other factors can be linked to the age of the infant’s parents. Younger mothers, under the age of 15, tend to deliver infants with low birth weight and prematurely due to the immaturity of their reproductive systems. Infants with older fathers tend to be born preterm as well, but specific reasons have not been found as to why this occurs. While low birth weight may not seem very dangerous to some people, for premature infants it can be fatal. Newborns have difficulty regulating their body temperature anyways, but premature infants have not had the time in the womb to build up body fats that full-term infants have, so preemies are even more of a danger because their temperature can fluctuate at an even higher degree. One of the other common causes of admission to the NICU in premature infants is that they can easily contract infections and that their lungs have not fully developed meaning that they have problems taking in a sufficient amount of oxygen, in turn causing Respiratory Distress Syndrome. Not all infants that are admitted to the NICU are for prematurity and low birth weight though, a significant number of infants in the NICU are for medical conditions, such as spina bifida, heart disorders, as well as many other disorders detected before the time of birth. Many times, premature infants are required to stay in the NICU until their initial due date, but there are times when they are released earlier, however many must stay in the NICU longer. These long stays in an isolated environment for the first few weeks of their lives can severely impact these infants. This is because they are unable to spend that time with their parents which is a crucial part of the beginning of their development, not having this bonding period could affect them well into adulthood.

## Developmental Delays

A developmental delay is when a child does not reach certain “developmental milestones” at the expected times. Delays can be in just one area, but some experience delays in many areas which include speech, gross or fine motor skills, social skills, or thinking skills. Many children will experience temporary delays in their development, but these are not considered to be a developmental delay, as many will learn the skill not long afterwards. However, children that are severely delayed developmentally are usually diagnosed by a doctor after a series of tests based on strict guidelines. The first three years of a child’s life are important for development and the skills learned during these years will last the child’s lifetimes. Therefore, it is very important for parents that suspect that their child might have a developmental delay go to their doctor to get testing done and get the help that the child needs so their life won’t be impacted as much later on as they get older. Researchers have not been able to identify a specific cause in developmental delay, but they are usually seen in cases of genetic malformations, such as Down Syndrome, or complications in pregnancy or birth, such as infections or prematurity. Developmental delays are commonly found in premature infants because they are not able to fully develop in the womb before they are born and have to spend many weeks in the NICU to gain weight and finish developing as much as possible. These infants are also very susceptible to brain bleeds and infections which may further cause severe developmental delays. Studies have also shown that infants that spend a significant amount of time in the neonatal intensive care unit will experience hearing loss and that the population of premature infants are ten to twenty times more at risk to experience hearing loss as well. These hearing impairments have the impact of causing speech delays in children if they are not caught early on and fixed by use of hearing aids or a cochlear implant. Most children that have been diagnosed with a developmental delay go through therapy to attempt to either correct the delay, or help the child cope with their specific delay. Many of times these children will also get extra help when they get of school age and many school are accommodating of these children that don’t have severe delays, but have enough to inhibit them from being fully able to thrive in a regular classroom. Most of these children that have delays as young children are able to fully thrive on their own as they get older, if they get the proper help from either their family or therapists to aid them in catching up from their delay.

### Mental Illnesses

The first few weeks after birth is very crucial for infants to develop an attachment and bond with their parents to be able to thrive. There has been a multitude of infant deaths recorded over the centuries of infants simply giving up and dying because they are not being cared for or given affection. There was even an experiment conducted in the United States in 1944 where 20 infants’ physical needs were taken care of, but the caregivers could not look, touch, or speak to the infant as much as possible. More than half of the infants died during the experiment even though nothing was physically wrong with them, giving the conclusion that affection and nurturing is a physical need in human health. Because premature infants have to spend so much time in the NICU and away from human contact, it has been shown that many of the infants will develop some sort of mental disorder as they get older. The most common disorders are severe anxiety, emotional detachment, and depression. This can be linked to the fact that premature infants are not able to start bonding with their parents right after birth. Many of times, children that spent a significant amount of time in the NICU will have severe separation anxiety when they are away from their parents and later their separation anxiety can develop into different anxieties as they get older, such as social anxiety. When infants have skin to skin contact, their bodies produce oxytocin which aid in brain development. Since many preterm infants have to be in the NICU, they are not able to get this skin to skin contact and because of this, mental disorders can develop since they are not able to produce as much oxytocin. Another problem these NICU infants face is that they are not use to close contact when they are finally released from the hospital. Normal, full term infants are constantly being held by their parents and know that when they cry, they will be picked up and held. But with NICU babies, many are so fragile that they cannot be picked up and held when they cry or really any other time. This can cause long term effects on the infant as they grow into childhood and adulthood. While many mental disorders will not be diagnosed until the child is well into school age, it is important for parents to start recognizing the signs, especially if the child did spend time in the NICU when they were born. There have even been studies that show that infants that had parents that let them “cry it out”, will also develop mental disorders, like emotional detachment and anger outbursts because they were not soothed as infants. While this information may not seem correct and many people may think that most mental disorders are either genetic or developed later on in life, it also develops in infants. Yes, most mental disorders are genetic, but just because something like depression is diagnosed in most members of one’s family, it does not necessarily mean that it will be developed in everyone in the family. These infants are very fragile mentally, they are already overwhelmed after coming out of the womb, but on top of that they have the stress from being born early or having a difficult birth. These neonatal infants need to have constant care, not only medically, but also care helping them mentally.

### What are NICU’s are doing to combat these things?

After several studies came out, many hospitals started putting regulations in the NICU in effect to help aid these infants mentally. Some of these regulations include massaging the infants multiple times a day to help release oxytocin which aids in brain development. Even though these infants are extremely fragile, it is still so very important that they get physical contact right after birth. Another thing that hospitals do is called “Kangaroo Care”. This is when the parents of the premature infant are able to hold their child. The parents usually have their shirts off and the infants are placed on their parent’s bare chests. This maximizes the amount of skin to skin contact, which once again, will aid the infant in producing the oxytocin that is so crucial in infant brain development. Other programs, like “Cuddle” programs have started in hospital NICU’s that gives people the opportunity to sign up to cuddle the infants that have to be in the NICU because the parents are unable to be there full time. These programs are few and far between as of now, but many are starting to be founded in hospitals because of the research that have come from these programs how many of the infants will get better quicker than those hospitals without them. These programs are very difficult to get into as of now, and have very rigorous background checks and age requirements, but they are very valuable to the neonatal intensive care unit. Now with all good must come a bad of course. While these programs have been put into effect and many hospitals, there are some that are trying to make a profit from it. There have been many instances where a parent is charged for participate in “Kangaroo Care” even though it helps their baby get better quicker and gives the parents a chance to hold their babies that they may not have held before. There needs to start being rules and regulations put into place so that these programs can be readily available for parents of infants in the NICU not only for the parent’s sake, but also for the healthy development of the child’s brain while they are healing and finishing developing in the NICU.

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