How Maternal Substance Abuse Affects a Child’s Development

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This paper will explore published sources that were found in articles that came from online databases as well as published magazines. This paper will focus on the main issue, which is maternal substance abuse affects a child’s development. One of the main topics that will be focused on throughout the paper is how maternal abuse of drugs is a growing issue. A second topic that will be discussed throughout the paper is how cigarette smoking can cause the fetus to develop health problems throughout life. Also, economic factors that are linked to smoking will be discussed. Consuming alcohol during pregnancy can lead to serious problems as well. Mothers who consume alcohol during pregnancy can cause the fetus to develop Fetal Alcohol Syndrome (FAS). A fourth topic that will be covered through this paper is the use of cocaine during pregnancy. Cocaine can be very dangerous to the fetus. This can cause the fetus to be drug dependent when born. Also, cocaine use can cause life threatening symptoms for the mother, as well as the fetus. The conclusion of the paper will focus on factors that need to be taken in order to reduce maternal drug use.
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The Maternal Abuse of Drugs is a Growing Issue

The maternal abuse of drugs is a growing issue in today’s society. Many expecting women do not understand the consequences their child will face emotionally, developmentally, and cognitively. In a study that was conducted in Southern Oregon, showed that “women participating in a national research study ranked the highest in the nation for using substances harmful to fetuses” (Specht, 2010, p. 1). This shows that the maternal use of drugs is an increasing issue. Many physicians have been studying the increase of maternal drug use overtime to learn why maternal mothers are abusing substances while pregnant. Physicians have created ways to crack down on the mothers who are abusing and harming their fetus, but physicians have also created ways to help the abusing mothers to turn away from drug use. According to the article written by Specht (2010), “the data showed Southern Oregon women were collectively consuming harmful substances such as tobacco, alcohol, marijuana, and other illegal drugs” (p. 1). However, it is a difficult task to get the issue out into the open. Many people in the Southern Oregon community rather walk away from the issue and pretend that the issue does not exist (Specht, 2010, p. 1). Society can play an effective role by helping the newborns who are born to substance abuse mothers, but many in the Oregon community do not want to face the increasing issue. According to Specht (2010) “the data that was collected from 3,702 women in the three county area, the pregnant women consisted of 2,613 from Jackson County, 972 from Josephine County and 117 from Douglas County were asked a series of questions when they sought pre and post natal care at several public and private health care facilities” (p. 1).

Specht’s (2010) study showed the following:
21 percent of women in Josephine County continued to use alcohol after they found out they were pregnant, as did 18 percent in Douglas County and 15 percent in Jackson County. The study also showed 50 percent of pregnant women in Douglas County continued to use cigarettes after finding out they were pregnant, followed by 33 percent in Josephine County and 19 percent in Jackson County. (p. 1).

Another source that proves that drug usage among pregnant women is an increasing issue comes from *The New Zealand Medical Journal*, which states “the dramatic increase in the use of these drugs in New Zealand has largely been associated with the young male population” (Wouldes, LaGasse, Sheridan, Lester, 2004, p. 1). Although the male population was once predicted to use methamphetamines, the female population made a turn around. According to Wouldes et al., (2004), “it has become more apparent that a growing number of New Zealand women are using methamphetamine during their pregnancy” (p. 1). Since the increase of methamphetamine use by pregnant women, many physicians are studying the causes by issuing referrals. This shows that the physicians are trying to figure out why women are abusing substances while pregnant. If methamphetamines were once abused mostly by the male population, then women who are expecting are not being educated on the effects.

Wouldes’s et al., (2004) study shows the following:

In 2001, 10% of the total Alcohol Drug and Pregnancy Team (ADAPT) referrals were due to methamphetamine use and associated problems. This escalated to 59% in 2003. Women referred to ADAPT have a high rate of mental and physical health problems that are often related to their drug use. (p. 1).
MATERNAL SUBSTANCE ABUSE AFFECTS A CHILD’S DEVELOPMENT

Note In the table, the Psychosocial and Health Factors that ADAPT reported in over a year demonstrates the number of mothers they have seen with severe problems. Reprinted from “Maternal methamphetamine use during pregnancy and child outcome: what do we know?”, by Trecia Wouldes, Linda LaGasse, Janie Sheridan, and Barry Lester, 2004, The New Zealand Medical Journal, 117, p. 1. Adapted with permission.

<table>
<thead>
<tr>
<th>Psychosocial and Health Factors</th>
<th>N=34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple drug use/abuse including: cigarettes (33), marijuana (14), alcohol (10), opiates (6)*</td>
<td>33</td>
</tr>
<tr>
<td>History of not keeping appointments for antenatal check-ups</td>
<td>14</td>
</tr>
<tr>
<td>Mental health problems including psychotic behavior and attempted suicide</td>
<td>10</td>
</tr>
<tr>
<td>Referrals to Child, Young Persons and Family Service</td>
<td>10</td>
</tr>
<tr>
<td>Custody issues due to unstable home environment</td>
<td>7</td>
</tr>
<tr>
<td>Legal proceedings pending for mother or imprisonment</td>
<td>5</td>
</tr>
<tr>
<td>Medical complications prenatally</td>
<td>4</td>
</tr>
<tr>
<td>Known history of overdose</td>
<td>2</td>
</tr>
</tbody>
</table>

Methampetamines can be very toxic to expecting mothers. Not only can these drugs be toxic to mothers, they also can cause damage to the fetus. If many of the expecting mothers who are using methamphetamines develop mental and physical problems, then they cannot take care of their child to the best of their ability. Many of these women who begin to abuse substances are not educated properly on the harm they are causing to their fetus. In order to further understand how methamphetamines can damage a fetus, methamphetamine needs to be defined. According
to Wouldes et al., (2004), “methamphetamine can be injected, smoked, snorted, or ingested orally or administered anally” (p. 2). These drugs can harm a mother in many ways. For example, “all illicit drugs taken during pregnancy cross the placenta and reach the fetus. The effects of drugs in the fetus can be caused directly though placental transfer of the drug, or can be secondary to changes in the fetal environment” (Wouldes et al., 2004, p. 2). When using methamphetamines, the mother is causing harm to herself and to her child. When a mother begins to abuse drugs while pregnant, she is also increasing the chance for her child to be taken away when born. It is the mother’s full responsibility to keep her child healthy. When a maternal mother abuses drugs, she is causing harm to an innocent life while putting the child’s future health at risk. The increase of methamphetamine in New Zealand is an issue that many doctors are trying to further understand. However, doctors and physicians report some instances in which the child has been affected by the use of maternal methamphetamine.

A third source that claims the increase of maternal drug misuse comes from The British Journal of Psychiatry, which states “an anonymous screening of consecutive urine samples testing positive for pregnancy from a UK inner city clinic demonstrated that approximately 16% of the women had taken one or more illicit substances” (Johnson, Gerada, Greenough, 2003, p. 1). However, a second study was performed in the U.S. which showed greater results (p.1). This indicates that maternal drug use is not only taking place in other countries, but it is also occurring in America as well. According to Johnson et al., (2003), “the prevalence of drug misuse in the USA appears to be even higher: prospective screening of newborns in a high risk urban population revealed that 44% of 3010 babies tested positive for opiates, cocaine, or cannabis” (p. 1). The increase in maternal drug use is proven from the three sources to be an increasing issue.
Maternal drug use does not only take place in part of the country, but it takes place in different countries. If society took action on this rising issue, then it could have the potential to decrease. In order for maternal drug use to decrease, many women need to be educated at a young age on the effects they can cause to themselves and to their potential infant.

**Smoking during Pregnancy**

Research has shown that smoking during pregnancy can lead to many deformities for the infant. Not only can maternal smoking lead to deformities for the infant, but second hand smoke can also affect the fetus. Any mother who is expecting needs to take extra caution in their surroundings. According to *Nursing Times* (2011), “researchers have found that smoking during pregnancy increases the risk of birth defects, such as club foot and missing limbs” (p. 1). Although, many women smoke during pregnancy, it has been proven that it is not healthy for the fetus. “Smoking while pregnant is already known to be harmful to the baby, increasing the risk of miscarriage, small babies and premature birth” (*Nursing Times*, 2011, p. 1).

Not only can infants suffer from maternal smoking, they can also suffer from secondhand smoking. According to Blazek (2011), “children exposed to secondhand cigarette smoke had a 50% increased risk for neurobehavioral disorders compared with those with no exposure” (p. 1). A mother can be exposed to secondhand smoke by being around others who smoke. Also, being outside in the environment can lead to problems because of the pollution in the air as well. The article suggests that the neurobehavioral disorders would decrease if all public places would ban smoking altogether (Blazek, 2011, p. 1). A study was conducted in order to find out the problems that children faced with those who smoked among them.

In Blazek’s (2011) study found that:
In 2007, a total of 5.5 million children resided in a home in which someone smoked. Among these children, the weighted prevalence of learning disabilities was 8.2%; attention deficit hyperactivity disorder/attention deficit disorder were 5.9% and conduct disorder prevalence was 3.6%. These rates translate to an overall 50% increased risk for neurobehavioral disorder in a multivariable adjusted analysis compared with children who did not reside with smokers. (p. 2).

The research also indicates the certain factors that play a role in why people smoke. For example, “children who were exposed to secondhand smoke and belonged to the group at the highest poverty level had a 22% increased risk for learning disabilities, whereas children whose mothers had higher levels of education and lived with both parents had a lower likelihood for developing neurobehavioral disorders” (Blazek, 2011, p. 2). While smoking can cause many severities for infants, it can also cause problems for the developing of the organs as well.

In a research study that was conducted by Bestati, Leteurtre, Duhamel, Proulx, Grandbastien, Lacroix, and Laclerc (2011) to compare an infant’s organ dysfunction and a child’s organ dysfunction

Bestati’s et al., (2011) results showed:

Of the 1,806 enrolled patients 171 were neonates. Incidence of multiple organ dysfunctions (MODS) and mortality rate were higher among neonates than in older children. Daily scores were significantly higher in neonates from day 1 to day 4. Daily cardiovascular, respiratory and renal dysfunction scores from day 1 to day 4 as well as the score for the entire pediatric intensive care unit stay were also higher in neonates. Neurological, cardiovascular, and hepatic dysfunctions
were independent predictors of death among neonates while ODs significantly contributed to the risk of mortality in older children. (p. 23).

**Drinking during pregnancy.**

Another significant factor that affects a child’s development is maternal use of alcohol. Just as the use of cigarettes during a pregnancy can lead to neurological damage to the fetus, so can alcohol. When a maternal mother consumes any amount of alcohol during pregnancy, it can cause harm to the fetus. Alcohol is easily passed along the fetus and can cause many life threatening illnesses to the baby (Holden, 2009, p. 1). According to Holden (2009), “consumption can have very negative effects on a fetus, and have lasting consequences for the child later in life. In fact, fetal alcohol syndrome is the leading preventable cause of neurodevelopment disorders, including mental retardation” (p. 1). Just as the maternal use of smoking can cause life threatening disorders such as ADD/ADHD, the maternal use of alcohol can cause fetal alcohol syndrome and mental retardation in an infant. Both are highly preventable misuses that mothers can take. Mothers need to be more cautious and aware of their developing fetus.

Fetal Alcohol Syndrome is a serious disorder that is a consequence from the maternal misuse of alcohol. “Fetal Alcohol Syndrome (FAS) is the most devastating known alcohol related health condition caused by alcohol consumption during pregnancy. More commonly diagnosed is fetal alcohol spectrum and alcohol related neurological disorder” (Holden, 2009, p. 2). Disorders such as cognitive, behavioral, and psychosocial problems can be lifelong disabilities for the child (Holden, 2009, p. 2). The child can certainly develop the same
psychosocial and health factors just as the mothers did in the table stated above. The infant can continue a learned cycle that he or she has seen from the maternal mother.

A second source that agrees with Holden (2009) claims that “Fetal Alcohol Spectrum Disorder (FASD) remains the largest preventable disability in the western world” (Williams, 2011, p. 1). Although this is a terrible disorder to inherit from a maternal mother, the consequences the infant will suffer are incurable. “Part of the problem with analyzing the impact of FASD is that there are many variables and there has been little research. Traits of those affected by FASD include poor memory, hyperactivity, short attention span or difficulty in communicating or coping with social situations” (Williams, 2011, p. 1). Many children who were born with FASD are labeled differently by others. According to Williams (2011), “children with FASD can be misdiagnosed with similar, but distinct, conditions such as autism or ADHD. The children may not be diagnosed at all and just be labeled as naughty or disruptive” (p. 1). However, if children go undiagnosed with FASD, then they could potentially end up with disruptive school experiences, substance misuse, unemployment, homelessness and being a criminal (Williams, 2011, p. 1). Children who are born to mothers who misuse drugs such as: smoking, alcohol, and methamphetamine/cocaine could all potentially end up with negative experiences in life.

Fetal Alcohol Syndrome remains a public health problem for many. Many mothers who are expecting can cause serious life illnesses to themselves and to their fetus. According to Hankin (2002), “national data collected in 1999 by the Behavioral Risk Factor Surveillance System (BRFSS), a telephone survey of the no institutionalized U.S. population, 12.8 percent of pregnant women consumed at least one alcoholic drink during the past month, a decrease from
16.3 percent reported in 1995” (p. 1). However, one of the results showed that binge and frequent drinking remained the same in 1995 to 1999 (Hankin, 2002, p. 1). However, the findings throughout the research suffer from limitations.

Hankin (2002) reports three limitations:

First, BRFSS data are self reported and might be subject to reporting biases, especially among pregnant women who are aware that alcohol use is not advised. Second, homeless women, women in homes without telephones, and women who were institutionalized were not surveyed. Both of these limitations could have an impact on prevalence rates. Third, because the proportion of pregnant women who were drinkers was limited in this sample, these estimated prevalence rates are subject to statistical limitations. Thus, the prevalence rates of drinking, frequent drinking, and binge drinking among pregnant women may actually be even higher that indicated by the BRFSS study. (p. 1).

Hankin also compares to the other two sources throughout research when claiming the abnormalities the fetus can face due to maternal alcohol abuse. For example, “the most severe condition caused by prenatal alcohol exposure is FAS, which is characterized by facial anomalies, growth retardation, and developmental abnormalities in the central nervous system that often include, mental retardation” (Hankin, 2002, p. 2). When a child is a subject to alcohol they can potentially repeat the cycle as well. “Some evidence indicates that prenatal exposure to alcohol increases the risk for internalizing disorders, including depression and negative self cognitions in the offspring (Hankin, 2002, p. 2).

Cocaine use during pregnancy.
The use of cocaine during pregnancy is the third issue that will be discussed. The maternal use of cocaine can lead to many problems for the mother as well as the fetus. Sometimes, the consequences can lead to death for both. According to Schuetze and Eiden (2005), “the impact of maternal cocaine use during pregnancy on infant development has been widely researched during the past two decades. Many investigators have focused on the possible physical and cognitive effects of prenatal exposure to cocaine on the development of infants and young children” (p. 2). Both researchers also believe that “prenatal exposure to cocaine has increasingly been linked to poorer regulation during infancy; the association between prenatal exposures to cocaine and infant regulatory processes may not always be simple or direct” (Schuetze, Eiden, 2005, p. 2).

The study that was conducted by Schuetze and Eiden (2005) “is to examine the association between maternal cocaine use during pregnancy and physiological measures of regulation, which included heart rate and respiratory sinus arrhythmia” (p. 1). For the method section of the study, Schuetze and Eiden (2005) “took 77 cocaine exposed and 64 comparison mother infant dyads recruited into an ongoing longitudinal study of maternal substance use and child development” (p. 5).

Schuetze’s and Eiden’s (2005) results indicated:

A dose dependent effect of prenatal exposure to cocaine on RSA. There was no evidence that fetal growth or other prenatal exposure to substances mediated this association or that fetal growth or maternal age moderated this association. Regression analyses also indicated that birth weight, but not birth length, head
circumference or other substance use, mediated the association between prenatal exposure to cocaine and heart rate. (p. 1).

Many women who abuse cocaine have pregnancy complications. These complications can be due to the drug that the mother is abusing. Also, complications can be due to the harm the mother is causing to the fetus. According to Johnson et al., (2003), “cocaine has been associated with placental abruption, particularly if taken around the time of delivery, and opiates increase the likelihood of ante partum hemorrhage” (p. 1). The consequences that the fetus may face differ from the use of other drugs, but not in a significant way. According to research, “reductions in birth weight and head circumference appear most marked in infants of women taking cocaine or of those who are multiple drug misusers” (Johnson et al., 2003, p. 2). If a mother is a multiple drug misuse, then it can cause different withdrawals for the infant.

According to Johnson et al., (2003),

Multiple drug misuse alters the pattern of withdrawal: for example, maternal cocaine use is associated with a reduction in the severity of opioid withdrawal by inducing a reduction in the adrenergic activity of the neurons of the locus coeruleus, but it does have vasoconstrictive effects on the developing brain, leading to neurological abnormalities and neonatal convulsions. (p. 2).

According to Johnson et al., (2003), “infants of women taking opiates, particularly the synthetic opioid methadone, have a two to three times increased risk of unexplained sudden death in infancy; this may be due to respiratory control” (p. 3). The infant’s growth and development can also be interrupted if the mother is using opiates during pregnancy. Women who are abusing cocaine or opiates need to be educated on the harm they are causing to their
fetus and to themselves. The maternal substance abuse mothers should seek intervention or their physicians to receive the extra guidance that they need.

Johnson et al., (2003) claims:

The growth pattern during the first 12 months does appear to reflect the intrauterine growth retardation suffered by drug-exposed infants. In one series some catch up growth was demonstrated, but persistent weight retardation at age 12 months correlated for social status. (p. 3).

Factors that need to be taken to reduce maternal drug use.

Many women who abuse substances while pregnant do not have the will power to stop. When they women are pregnant, they usually are not educated on what the harmful substance can do to the fetus. The effects of the drugs can last a lifetime for the fetus and can also cause harmful effects to the maternal mother. Scholarly journals have given many solutions for maternal women to stop using drugs. The articles also provide great educational advice to maternal mothers and what they can do to prevent substance abuse while pregnant.

It is very important to educate women early in life on the effect of substance abuse. By educating women early in their pregnancy, this will allow the women to learn about how the substance will harm their baby and will educate them on how the fetus is developing due to maternal abuse. Johnson et al., (2003) also provides additional ways of testing maternal mothers.

One way Johnson et al., (2003) suggests is:

Improving the outcome of drug misuse during pregnancy requires accurate identification of affected women and their infants; this cannot be achieved by maternal interview alone. In one series, 40% of women who denied substance
misuse had positive urine tests for non-prescribed substances. Urine screening of the mother or infant has a high rate of false negative results, as it is dependent on the time of sampling related to the time that has elapsed since the mother last misused drugs. (p. 3).

However, Johnson et al., (2003) has a better solution to testing maternal substance abuse. “The most accurate screening method is analysis of meconium” (Johnson et al., 2003, p. 3). The authors also provide information on how meconium is best for testing substance use. Johnson et al., (2003) states that “drug metabolites accumulate in the meconium by direct deposition from bile or by ingestion of metabolites in the amniotic fluid” (p. 3).

When it comes to the maternal use of drugs, the ideal goal is to get the mother to stop abusing drugs completely. It is hard to keep an addict from completely stopping since the relapse and fetal withdrawal are so great. Johnson et al. (2003) recommends a second type of helpful therapy for mothers. The second type of improvement is the substitution therapy (Johnson et al., p. 3). According to Johnson et al., (2003), “substitution therapy is appropriate for those misusing opiates as otherwise relapse is likely, which can result in cycling between withdrawal to intoxication, with wide variations in opiate levels and resulting fetal stress” (p. 4). By using the substitution therapy, deformities can be reduced of the fetus. For example, “substitution therapy is usually methadone which, compared with the illicit use of heroin, is associated with greater access of antenatal care and better maternal and infant outcomes, including a reduced risk of preterm delivery and low birth weight” (Johnson et al., 2003, p.4).

Another problem that many maternal mothers are facing is the abuse of alcohol. As stated earlier, the maternal use of alcohol can cause the infant to develop Fetal Alcohol Syndrome. One
source provides women with the help to stop drinking. Hankin (2002) provides universal prevention of maternal alcohol abuse intervention steps for women (p. 2).

Hankin’s (2002) claims that:

These interventions attempt to educate the broad public about the risks of drinking during pregnancy. These universal efforts might be geared toward pregnant women of childbearing age and often include public service announcements, billboards, pamphlets in physicians’ offices, and media advertisements. The alcohol beverage warning label is an example of a universal intervention that has been studied. (p. 2).

A second intervention step that Hankin provides is the selective prevention of maternal alcohol abuse (Hankin, 2002, p. 2). For example, “one example of selective prevention measures is the screening of all pregnant women for their alcohol use, followed by counseling of all drinkers regarding fetal risk, if warranted, referral to specialized treatment” (Hankin, 2002, p. 2).

The third intervention that will help maternal substance abuse mothers is the indicated prevention of FAS (Hankin, 2002, p. 3). As Hankin (2002) explains “these measures are directed at high risk women, including women who have previously abused alcohol while pregnant or while at risk for conception, or women who drink and have delivered an infant with FAS, ARND, or ARBD” (p. 3). All three interventions are to help maternal mothers reduce and initially stop drinking altogether while pregnant. These interventions can also help educate the public and give notice to the public on what they can do to help as well.

Another source that gives educational information on maternal use of alcohol comes from *The Commercial Appeal*. 
Holden (2009) claims:

All women who are trying to get pregnant should consult their physicians to establish the most healthful circumstance for the fetus. Women who learn they’re pregnant should immediately see their doctors and include the discussion of alcohol consumption. Learn everything you can from your personal physician and available science through web to make the best personal decision for your pregnancy and your child. (p. 2).

According to Specht (2010), “California women in two wine-country counties topped the charts in the abuse of alcohol while pregnant” (p. 2). These counties decided to make changes after knowing that women were abusing alcohol while pregnant. For example, “after one California county was tagged with the top fetal alcohol statistic, three large wineries in the area posted billboard ads with messages about the dangers of drinking while pregnant” (Specht, 2010, p. 2). However, the women in Southern Oregon would avoid seeing their physician when they knew that a screening would be done to test the use of drugs (Specht, 2010, p. 2). According to Specht (2010), “prenatal education needs to start in elementary school and continue throughout the grade levels” (p. 3). If the education on maternal substance abuse was taught earlier, then many mothers would be educated on the harm they are causing to their fetus.

The issue of secondhand smoking was discussed earlier as well. Many children who are exposed to secondhand smoke can develop many health problems as well as a fetus. One source that provides educational information on the reduction of secondhand smoke states “one possible solution to reduce secondhand smoke exposure in vulnerable populations would be to require public housing authorities to implement smoke free policies” (Blazek, 2011, p. 2). Blazek (2011)
also offers a second solution which is “factors such as lead exposure, maternal smoking during pregnancy and child’s current smoking status are potential unmeasured factors” (p. 2). If more public places banned smoking altogether, then children would not have to be exposed to these conditions. Also, women who are pregnant do not need to smoke because “children who are exposed to secondhand cigarette smoke had 50% increased risk of neurobehavioral disorders compared to those with no exposure” (Blazek, 2011, p. 2).
References


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http://rpumem.memphis.edu/lexisx/hottopics/lnacademic/?shr=t&csi=8406&sr=lni%2853C8-08N1-F180-327N%29


