A PREVENTABLE EPIDEMIC IN THE UNITED STATES: A STUDY OF THE DEMOGRAPHICS AND EDUCATIONAL PRACTICES ASSOCIATED WITH FETAL ALCOHOL SYNDROME

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CHAPTER I
INTRODUCTION

Education and dissemination of healthcare information to patients is an important factor in preventative medicine. Through the dissemination of preventative medical knowledge, patients are presented with the opportunity to take control of their health and defend against disease and injury. While education is the main focus of preventative measures, it is also the most challenging factor. Making appropriate education available to diverse populations, covering different healthcare topics, and spreading knowledge over a geographically large area is extremely challenging. Healthcare professionals are interested in how demographics impact disease incidence and treatment outcomes. Disease incidence can be affected by a variety of factors such as age, sex, education, and socioeconomic status. By determining the relationship between demographics and disease incidence, specific educational tools can be created specific to the population in need. These population-specific educational tools are more likely to increase the success of the education.

One particular form of developmental delay, known as fetal alcohol syndrome, might be positively affected by this type of population-specific education. Fetal alcohol syndrome occurs when a mother’s alcohol use effects development of the baby while in the uterus. In Abel’s study (1998) he found that the United States of America has the highest incidence of fetal alcohol syndrome when compared with other countries. This suggests, that fetal alcohol syndrome is in fact an epidemic, occurring at an increased
incidence beyond what is found in the total world population (Harkness & DeMarco, ).

The Center for Disease Control reports that fetal alcohol syndrome occurs in approximately 0.2 to 1.5 cases for every 1,000 live births in certain parts of the United States (CDC, 2012). Fetal alcohol syndrome is a permanent, life-long condition that can be modified with lifestyle adjustments, but cannot be cured. Therefore, preventative education can make a remarkable difference in the incidence of this devastating syndrome.

**History of Fetal Alcohol Syndrome**

The harmful effects of alcohol on pregnancy have not always been known. In fact, at some points in history, alcohol was even encouraged during pregnancy. Changes in recommendations in regards to alcohol use during pregnancy have the American population perplexed. In the latter half of the 19th century, physicians in the United States and Europe encouraged pregnant women suffering from morning sickness to drink sparkling wines. Other physicians continued to prescribe alcohol during pregnancy to act as an appetite stimulant (Golden, 2005). Many doctors during this time period were apprehensive to prescribe alcohol due to the risk of addiction. Physicians were not considering the effects that alcohol could have on the unborn baby. However, some physicians thought that the benefits of alcohol outweighed the risk of addiction (Golden, 2005). Although some Americans today realize that alcohol use is contraindicated in pregnancy, there are individuals who do not realize the harmful effects or have difficulty abstaining from alcohol while pregnant.
The diagnosis of fetal alcohol syndrome was officially discovered in 1973 (Golden, 2005). Today, alcohol is a proven teratogen that can have lasting implications for the unborn baby. A teratogen is defined as, “A non-genetic factor that can produce malformations of the fetus” (Davidson, London, & Ladewig, 2012, p.1177). Health care providers insist that no amount of alcohol during pregnancy is safe (Davidson, London, & Ladewig, 2012). Although fetal alcohol syndrome is completely preventable, it is thought to be the leading cause of mental delay in the Western World (Walker, Fisher, Sherman, Wybrecht, & Kyndely, 2005). Although fetal alcohol syndrome is preventable, the National Organization on Fetal Alcohol Syndrome (NOFAS) has concluded that 1 in 100 pregnancies is negatively affected by alcohol (Fetal Alcohol Syndrome). The sad reality is that women continue to drink during pregnancy and children continue to face the trials associated with this disorder.

Effects of Fetal Alcohol Syndrome and Pathophysiology

The effects of fetal alcohol syndrome depend on a variety of factors. The amount of alcohol consumed, the frequency of alcohol use, and the timing of the consumption all have an impact on the severity of the disorder (Larkby, 1997). If alcohol is consumed during the first trimester, embryonic development is particularly affected. Consumption of alcohol in the third trimester may lead to alterations in central nervous system development and overall growth of the fetus (Davidson, London, & Ladewig, 2012). Alcohol can also cause central nervous system damage and growth restriction by decreasing the amount of oxygen reaching the placenta (Thomas, Warren, & Hewitt, 2010). Certain aspects of fetal development are occurring depending on the week of
gestation. For example, during the fourth and fifth weeks of pregnancy, the fetus’ eyes are developing. Consequently, if a pregnant woman were to drink during these two weeks, then the baby may experience complications with vision or eye placement (Moore, 1993). Visual impairment and eye displacement are two common characteristics exhibited in fetal alcohol syndrome. Larkby (1997) concluded that prominent structural abnormalities typically occur with drinking early in pregnancy.

A safe amount or appropriate time to consume alcohol during pregnancy is impossible to conclude due to a woman’s varying genetic and metabolic conformation. Healthcare professionals cannot predict how alcohol consumption would affect every individual fetus; there are too many differing variables (Davidson, London, & Ladewig, 2012). For example, Willford, Leech, and Day (2006) conducted a study that focused on how the symptoms of fetal alcohol syndrome varied depending on the timing of alcohol use and the race of the mother. Their results show that timing and race play a role in long term outcome when analyzing alcohol exposure. Therefore, generalized recommendations for alcohol consumption cannot be made due to individual differences affecting outcomes. Women need to be informed of the detrimental effects alcohol can have on their child and understand that no amount of alcohol is safe at any point during pregnancy. Abstaining from all alcohol during pregnancy is the only safe recommendation that professionals can make.

**Diagnosis and Symptoms**

The symptoms of fetal alcohol syndrome can range from mild to severe. The symptoms may also present in different ways as the child matures and develops. Fetal
alcohol syndrome is more difficult to diagnose in older children and adults than in
younger children. For example, facial malformations and dysmorphic features, hallmark
indications of fetal alcohol syndrome, are more difficult to see in older children. Also, in
order for fetal alcohol syndrome to be diagnosed, there often must be some “evidence” of
alcohol use during pregnancy. This “evidence” is usually based on the mother’s self-
report and is therefore unreliable and difficult to validate (Larkby, 1997). It is crucial that
children with fetal alcohol syndrome be diagnosed promptly and accurately. Many
children are not diagnosed until they begin school, where cognitive deficits are noticed
(Ball, Bindler, & Cohen, 2010). Early intervention and specialized lifestyle modifications
promote a more positive outcome for children suffering from fetal alcohol syndrome
(Astley, Camichael-Olson, Jirikowic, & Kartin, 2007).

In order for health care providers to diagnose fetal alcohol syndrome early, the
symptoms must be known and recognized. Fetal alcohol syndrome has both physical and
psychological implications. Physical manifestations vary according to alcohol exposure
and may be difficult to detect if the malformations are mild. Children who are exposed to
larger quantities of alcohol with more frequency, often have facial malformations which
include: microcephaly (small head), a smooth philtrum (space between the nose and the
lip), a thin upper lip, and short palpebral fissures (opening between the upper and lower
eyelid). Other malformations may include a low nasal bridge, ear anomalies, and
epicanthal folds (skin of the upper eyelid) (McGee and Riley, 2005). One study found
that children who have facial abnormalities related to fetal alcohol syndrome are more
likely to have a decrease in their intelligence quotient [IQ] (Appelbaum, 1995). These
specific malformations indicate a definitive diagnosis of fetal alcohol syndrome; however, there are other clinical manifestations that can lead to diagnosis.

In addition to facial malformations, children with fetal alcohol syndrome are often small for their age. Typically children with fetal alcohol syndrome fall below the 10th percentile for growth. The effect of alcohol on height and weight is often dictated by the amount and frequency of alcohol use (Larkby & Day, 1997). Visual impairment is also common among children with fetal alcohol syndrome (Ball, Bindler, & Cowen, 2010). Due to visual impairment, the child’s coordination and spatial intelligence are often affected. The psychological symptoms associated with fetal alcohol syndrome can also be challenging. Infants with fetal alcohol syndrome may demonstrate irritability, difficulty feeding, and poor weight gain. As they grow older, psychological symptoms may include hyperactivity, impulsivity, and inattention (Knight & Longmore, 1994, p. 61). Although some symptoms may seem subtle, appropriate intervention remains crucial. Some of the psychological effects of fetal alcohol syndrome seen in children include difficulty with social skills, difficulty with attention, and hyperactivity. Other issues concerning sleep, anxiety, depression, and adjustment disorders often occur with fetal alcohol syndrome (Department of Health and Human Services, 2005). Research has shown that children who are exposed to alcohol prenatally have significant impairments in executive functioning and may have difficulty focusing or performing deliberate actions (Kalberg, Kodituwakku, & May, 2001). Children with fetal alcohol syndrome often struggle with following directions and understanding social cues (Green, 2007). Parenting and the school environment must be manipulated to better suit the needs of a child with fetal
alcohol syndrome. Adjustment of the environment is the main treatment for these psychological symptoms and adjustments will be necessary throughout life.

In many cases, children who do not have facial abnormalities, known as dysmorphology, still suffer from intellectual and emotional symptoms. Often, health care providers are looking for physical indications of the syndrome and may attribute psychological symptoms and cognitive delays to another health issue (Green, 2007). Unlike other disorders, there is not a lab test or genetic study that can definitively diagnose fetal alcohol syndrome. Due to this lack of definitive testing, symptoms are the main indicator of fetal alcohol syndrome and symptoms can be easily missed. This can delay interventions or prevent accurate diagnosis of the disorder. Delaying intervention can have negative consequences for the child. Godel (2002) wrote “Children with FAS who are excessively friendly may be at risk for abuse, and those who lack a sense of consequence may get into trouble with the law.” Early intervention is key with this disorder. Children who receive early interventions for fetal alcohol syndrome have improved overall development. Ideally, interventions should take place between birth and 3 years of age. Interventions to improve walking, talking, and interaction should be included in the child’s plan of care. Parents should always be encouraged to talk to the child’s doctor if they notice any subtle delays in their child or have any concerns about development. Early and appropriate intervention promote better outcomes (CDC, 2012).

Often, children are diagnosed when they attend school where cognitive and intellectual delays are more apparent (Ball, Bindler, & Cowen, 2010, p.922). Often children with prenatal alcohol exposure have mild to moderate mental retardation (Knight
Facial dysmorphology is a common trait of fetal alcohol syndrome. Researchers at the Center for Disease Control [CDC] explain that facial features including a smooth philtrum, a thin vermillion border (point where the lip and skin meet), and small palpebral fissures are definitive diagnostic criteria for fetal alcohol syndrome. Experts at the CDC (2012) also explain that growth retardation is part of the diagnostic criteria. Also, in order to be diagnosed with fetal alcohol syndrome, the individual must present with more than one neurological or functional abnormality (CDC, 2012). Lastly, alcohol use during pregnancy does not have to be confirmed for a definitive diagnosis. All efforts should be made to obtain information about alcohol exposure; however, an inability to confirm alcohol use should not prevent diagnosis (CDC, 2012).

Treatment and Prevention

While some birth defects are random and uncontrollable, others can be completely prevented through abstaining or engaging in certain behaviors. Many birth defects are unpreventable; however, those that can be prevented should be a teaching priority for health care professionals. As is the case with many diseases, treatment of fetal alcohol syndrome requires a multidisciplinary approach. Patients with fetal alcohol syndrome face a unique set of challenges and require specialized care and interventions. Adjustments at home and at school are necessary in order to promote optimal functioning in a child diagnosed with fetal alcohol syndrome (Paley, & O’Connor, 2011). Researchers are currently looking into ways in which environment can positively affect children with this diagnosis (Thomas, Warren, & Hewitt, 2010). Some research studies have suggested that the child’s environment can determine the severity of the fetal
alcohol syndrome symptoms. Often children with fetal alcohol syndrome have had multiple living arrangements. Knight and Longmore (1994) wrote, “Even when removed from a potentially noxious environment, their childrearing experiences are unlikely to be optimal” (p. 64). This instability in environment may have a detrimental impact on the child’s long term outcome. Severity of fetal alcohol syndrome varies from person to person depending on timing and frequency of alcohol use during pregnancy. It has been concluded that children have a higher risk of having anxiety and depression when alcohol consumption occurs in the first trimester. It has also been concluded that alcohol consumption in the third trimester increases the risk of aggressive behavior in the child. Clearly, the amount of alcohol and timing of consumption are critical factors in the occurrence of the disorder (O'Leary, Nassar, Zubrick, Kurinczuk, Stanley, & Bower, 2010). Primary care providers are in an ideal position to diagnose fetal alcohol syndrome and should be extensively educated on signs and symptoms. Symptoms of fetal alcohol syndrome last throughout an individual’s lifetime. Therefore, the patient will require resources and support into adulthood (Applebaum, 1995).

Primary care providers may be in an ideal position to diagnose, but they are also in an ideal position to prevent. Fetal alcohol syndrome is the leading cause of preventable mental delay in America (CDC, 2012). The effects of this disease are devastating and chronic. The Center for Disease Control reports that “Many women who drink during pregnancy and their partners are not educated about FAS [fetal alcohol syndrome] or the harmful effects of drinking during pregnancy” (2012). Education is the most important factor when focusing on prevention. Education that is informative, clear, and appropriate
for the audience can be very effective, especially in the healthcare setting. The education can be in the form of a simple brochure or a more complex program. It is important to consider the intended audience and their associated demographics.

**Demographics**

A recent article by Thomas, Warren, and Hewitt, (2010) concluded that factors including low socioeconomic statuses, minimal education, advanced maternal age, increased number of pregnancies, and poor nutrition make women more likely to have children with more severe outcomes related to fetal alcohol syndrome. The researchers determined that these specific factors lead to having a child with more serious symptoms of fetal alcohol syndrome. Researchers in Montana in 2003 drew similar conclusions to the Thomas, Warren, and Hewitt study. The Montana researchers used 232 participants who were at risk of alcohol abuse during pregnancy. The results from this study also concluded that low socioeconomic status, poor health, and advanced maternal age were significant determinants of alcohol abuse during pregnancy. This study also found that women who were more likely to abuse alcohol were Caucasian, dealing with drug addiction or mental illness, and had experienced physical abuse in the past year (Haynes, Dunnagan, & Christopher, 2003).

Another study that supports the notion that advanced maternal age is strongly associated with alcohol abuse was conducted by May and Gossage (2011). They concluded in their alcohol abuse studies that, “The older the drinking pregnant woman is and the more pregnancies and children she has had, the greater the average likelihood that she will have a more severely affected child” (p.20). While the previous three studies
analyzed determinants of alcohol use during pregnancy, the following study evaluated characteristics of mothers who have given birth to children with fetal alcohol syndrome. This study, completed in 2011, found that mothers of children with fetal alcohol syndrome were, “more likely to be older, non-Hispanic, unmarried, unemployed, and without prenatal care, to smoke during pregnancy, to have a lower educational level, and to have more live born children” (Cannon, Dominique, O'Leary, Sniezek, & Floyd, 2012). This study analyzed data from Alaska, Arizona, Colorado, and New York. Many of these demographical conclusions correlate with the results of the previously mentioned studies. The study concluded that mothers who have one child with fetal alcohol syndrome often have other children as shown in Table 1. This study also revealed that in the state of Alaska, approximately 1 in 3 mothers of a child with diagnosed fetal alcohol syndrome had another child with alcohol-related effects. There were a total of 241 mothers who participated in this study. In this study, 38 of the mothers had more than one child with fetal alcohol syndrome as shown in Table 2 (Cannon et al., 2012). It can be concluded that mothers need education on this topic, especially when there are prior instances of fetal alcohol syndrome in earlier children. Pregnancy education and prenatal support are important to prevent fetal alcohol syndrome from striking a family multiple times.
Table 1

**Previous Live Births of Mothers with Children with Fetal Alcohol Syndrome**

<table>
<thead>
<tr>
<th># of Live Births</th>
<th>Alaska</th>
<th>Arizona</th>
<th>Colorado</th>
<th>New York</th>
<th>Combined Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>11</td>
<td>9</td>
<td>18</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>20</td>
<td>8</td>
<td>16</td>
<td>60</td>
</tr>
<tr>
<td>3-4</td>
<td>20</td>
<td>29</td>
<td>11</td>
<td>19</td>
<td>54</td>
</tr>
<tr>
<td>&gt;= 5</td>
<td>9</td>
<td>18</td>
<td>7</td>
<td>9</td>
<td>43</td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td><strong>63</strong></td>
<td><strong>81</strong></td>
<td><strong>35</strong></td>
<td><strong>72</strong></td>
<td><strong>251</strong></td>
</tr>
</tbody>
</table>

*N=74  *N=118  *N=67  *N=94  *N=353

*Note:* Information for this table was extrapolated from data collected in Cannon, Dominique, O'Leary, Sniezek, & Floyd’s study in 2012. This study was published in 2012 and was completed in the states of Alaska, Arizona, Colorado, and New York. Data were collected from mothers who have children with fetal alcohol syndrome or suspected fetal alcohol syndrome. Data were collected through hospitals, clinics, private physicians, birth certificates, intervention programs, Medicaid, birth defects surveillance programs, and hospital discharge information. It can be concluded from the above data that many mothers who have a child with fetal alcohol syndrome have had previous births.
Table 2

*Other Child with Suspected Alcohol Effects*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>% Yes</th>
<th>% No</th>
<th># of Respondents</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska:</td>
<td>15</td>
<td>37</td>
<td>29%</td>
<td>71%</td>
<td>52</td>
<td>74</td>
</tr>
<tr>
<td>Arizona:</td>
<td>9</td>
<td>50</td>
<td>15%</td>
<td>85%</td>
<td>59</td>
<td>118</td>
</tr>
<tr>
<td>Colorado:</td>
<td>7</td>
<td>45</td>
<td>13%</td>
<td>87%</td>
<td>52</td>
<td>67</td>
</tr>
<tr>
<td>New York:</td>
<td>7</td>
<td>71</td>
<td>9%</td>
<td>91%</td>
<td>78</td>
<td>94</td>
</tr>
<tr>
<td><strong>Combined Totals:</strong></td>
<td><strong>38</strong></td>
<td><strong>203</strong></td>
<td><strong>16%</strong></td>
<td><strong>84%</strong></td>
<td><strong>241</strong></td>
<td><strong>353</strong></td>
</tr>
</tbody>
</table>

*Note:* Information for this table was extrapolated from datum collected in Cannon, Dominique, O'Leary, Sniezek, & Floyd’s study in 2012. Each respondent involved in the study above had a child with fetal alcohol syndrome or suspected fetal alcohol syndrome. The above table shows the number of respondents who had or did not have other children with suspected alcohol effects. In this study, out of the 241 respondents, 38 not only had one child with fetal alcohol syndrome, but also another child with suspected alcohol effects.

The Center for Disease Control (2012) reports that between 2001 and 2005, the highest rates of alcohol consumption during pregnancy were among individuals who were employed, unmarried, college graduates, and between the ages of 35-44 as represented in Table 3. The CDC also notes that alcohol use prior to pregnancy is a
reliable predictor of alcohol use during pregnancy. An individual who drinks prior to pregnancy may drink during the first few weeks of pregnancy due to being unaware of the pregnancy (2012). Critical development occurs during these first few weeks of gestation and alcohol use during this time can have devastating effects on the fetus. One research study focused on the attitudes of women regarding alcohol use. In this study, participants were women visiting outpatient clinics for emergency contraception or pregnancy tests. The younger women in the study drank significantly more alcohol and shared more tolerant views toward alcohol use (Walker et al., 2005). The fact that the women were drinking heavily and engaging in unprotected sexual intercourse is concerning because this type of risky behavior has been shown to have deleterious effects on offspring. While the CDC found that older women have higher rates of alcohol consumption during pregnancy, younger women are also in need of education.
Table 3

**Characteristics of Pregnant Women Likely to Use Alcohol**

<table>
<thead>
<tr>
<th>Table 3 - Characteristics of Pregnant Women Likely to Use Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The CDC reported that between 1991 and 2005, pregnant women</strong></td>
</tr>
<tr>
<td><strong>most likely to report alcohol use were:</strong></td>
</tr>
<tr>
<td>35-44 years of age</td>
</tr>
<tr>
<td>College Graduates</td>
</tr>
<tr>
<td>Employed</td>
</tr>
<tr>
<td>Unmarried</td>
</tr>
</tbody>
</table>

*Note.* This datum were collected between 1991 and 2005 by the Centers for Disease Control and Prevention. The CDC (2012) also notes that alcohol use prior to pregnancy was a significant indicator for alcohol use while pregnant.

Research concerning the demographics of women who have children with fetal alcohol syndrome is difficult to conduct. Factors such as stigma regarding alcohol use during pregnancy, relying on subjective data, and lacking definitive testing all lead to this lack of research. The number of cases of fetal alcohol syndrome is not well-documented. Although national averages for numbers of cases has been estimated, it is almost impossible to locate statistics that are relevant to a specific state or county. A recent article by May and Gossage (2011) suggested that data on drinking during pregnancy is grossly underreported in the United States and most other countries. Without proper documentation of the cases of fetal alcohol syndrome, it is difficult to show the need for increased education and preventative care. However, the CDC estimated that 54.4% of
women in the United States between the ages of 18 and 44, child-bearing age, use alcohol (2012). If women are using alcohol and are of age to become pregnant, then there is a valid reason to increase and promote education on this important topic.

**Current Legislation**

Due to the devastating effects of fetal alcohol syndrome and the financial implications, the topic of fetal alcohol syndrome prevention, research, and treatment has been brought up in the United States Congress. In 1992, Senate Bill 3183 entitled, the *Comprehensive Fetal Alcohol Syndrome Prevention Act*, was brought before the Senate. The bill stated that fetal alcohol syndrome is the leading known cause of preventable mental delay. The writers of the bill proposed a comprehensive program, education in schools, training for health care providers, grant money for community programs, and accurate surveillance in regards to fetal alcohol syndrome. Unfortunately, the bill was deferred to the senate committee and then died. The bill was re-introduced in 1993, 1994, 1995, and 1997 to no avail. Every time the bill was re-introduced, the bill was referred to the Senate Committee where the bill died. On February 7, 2013 U.S. Senators Tim Johnson (D-SD), Lisa Murkowski (R-AK), and Mark Begich (D-AK) re-introduced Senate Bill S.237 (2013) entitled, *Advancing FASD Research, Prevention, and Services Act*. The bill was introduced in 2005 and 2010 but died on both occasions. S.237 (2013) includes topics such as “research, prevention, and services for Fetal Alcohol Spectrum Disorders” (Press Release). If this bill were to become enacted, money would be allotted for improved surveillance, education of health care professionals, preventative education programs, and support for individuals dealing with fetal alcohol syndrome. Between the
years of 2014 and 2018, the bill would allot $27 million dollars to these programs. Also, on August 1, 2012 a Senate Bill 536 entitled, *National Fetal Alcohol Spectrum Disorders Awareness Day*, was introduced and agreed upon. This bill names September 9, 2012 an awareness day to remind women not to consume alcohol during the 9 months of pregnancy (S. Res. 536). Fetal alcohol syndrome is receiving national attention in the United States Congress because of its high incidence, preventability, and lack of resources.

**Financial Implications**

The implications that prenatal alcohol use has for the child are devastating, however, the financial implications are also concerning. In 2002, it was estimated that the lifetime cost for one individual with fetal alcohol syndrome was approximately two million dollars (CDC, 2012). Often individuals with fetal alcohol syndrome require group homes, learning accommodations, and medical care which can place financial strain on families. It is also estimated that the cost to the United States for fetal alcohol syndrome alone is over four billion dollars per year (CDC, 2012). The finances of the nation and the finances of individual families are affected by this preventable disease.
CHAPTER 2
PAST PREVENTATIVE FETAL ALCOHOL SYNDROME EDUCATION

Successful Peer Led Preventative Education Program

Ideally, education on fetal alcohol syndrome takes place prior to an individual becoming pregnant. Women need to be aware that unprotected sexual activity in combination with alcohol consumption can have unfavorable consequences. Education on healthy pregnancy and risky behaviors during pregnancy should take place early so that prevention is effective. In the Barr et al. (2009) study, written education materials on shaken baby syndrome were distributed to new mothers. The study found that mothers who received the written education materials had, “a higher rate of walking away with inconsolable crying” when compared to the traditional education methods. Placing the child in a safe place and walking away was talked about in the educational materials as an appropriate action with a baby who is crying inconsolably. This suggests that the education materials alone were able to positively affect behavior. This study indicates that tangible education materials that can be taken home with the mother could be beneficial for effective education.

Schools are an ideal setting for this type of education to take place. However, many middle schools and high schools teach abstinence only education and may feel that education on pregnancy is condoning teenage sexual activity. According to section 3313.60 of the Ohio Revised Code teaching in schools should, “Stress that students should abstain from sexual activity until after marriage.” This legislation demands that
only abstinence programs be utilized in public school education. Although teenage pregnancy rates have recently decreased, teenagers and young women are still in need of information on a healthy pregnancy. In 2010, the CDC (2012) reported that 367,752 infants were born to women between the ages of 15 and 19 in the United States. In 2009, researchers at the CDC concluded that 72.5% of students in ninth through twelfth grade had consumed alcohol on at least one occasion (2012). Irresponsible sexual activity and alcohol consumption can have adverse outcomes by themselves, however, once combined, more serious consequences can ensue. These younger women may not have the education or knowledge base that older mothers have to fully comprehend or appreciate their actions. Proper use of education is dependent on maturity and unfortunately for some individuals, education would not necessarily make a difference in lifestyle choices. One study concluded that “Younger women reported significantly more tolerant attitudes towards alcohol use and drank significantly more beer on occasion” (Walker et al., 2005, p. 189). These study results imply that an education program directed at younger women may be more beneficial due to their higher consumption of alcohol.

In a city in North Carolina, Boulter (2007) presented a fetal alcohol syndrome prevention presentation to 642 students across five middle schools and one high school. The voluntary presentation leaders were psychology majors and were observed by a college faculty member. The presentation was 40 minutes long and involved a variety of education techniques including a video and demonstrations. The presentation opened with a demonstration using alcohol and a raw egg which represented an infant’s brain.
The demonstrations showed how the alcohol cooked the white part of the egg, similar to the damaging effect that alcohol has on an infant’s brain. This demonstration was followed by a pre-survey which students took via PowerPoint questions. After the students watched a video on the effects of alcohol on pregnancy, the students then took a post-survey. After the post-survey was completed, the presenters used 3 infant dolls. One doll represented a healthy baby, one represented a child with FAS, and one represented a drug affected baby. The students passed around the dolls noticing the physical manifestation of FAS and the tremors and irritability of a baby affected by drugs. Six weeks after the presentation, the students were re-evaluated to see if the information was retained.

The results of this peer-led presentation on fetal alcohol syndrome showed that this presentation did promote retention of the information presented. Although high school and middle school students were both included in the study, high school female students tended to score higher when re-evaluated six weeks later. This indicates that the high school age group may retain information on this topic better than its’ younger counterpart. Variables such as maturity level, experience with dating and intercourse, ability to understand the presentation, and experience with drinking would also play a role in ability to retain the presented material. The high school group may also have felt that the information was more pertinent to them and simply retained it better. This implies that the high school age group may be an appropriate and effective time to begin fetal alcohol syndrome prevention education. Researchers at the Department of Health and Human Services (2010) concluded, that between 2006 and 2010, 27% of teenagers...
between 15 and 17 and 62.7% of 18 and 19 year olds have had sexual intercourse. While all adolescents would most likely benefit from fetal alcohol syndrome education, education may be more relevant for older teenagers. Through this 6 week follow-up, researchers in Boulter’s study also learned that, “Overall follow-up scores showed that students’ retention of the presentation information had increased since the posttest” (Boulter, 2007, p.7). The study author concluded, through the pre-test and post-test design, that this presentation did increase the students’ knowledge base. This type of peer led presentation would be successful in a variety of communities. The interactive approach, follow-up lesson, and adequate evaluation all contributed to the program’s success. A presentation similar to this one would rely on volunteers, which would add to cost effectiveness of the program. The main obstacle for this type of program involves restrictive laws on sexual health education and schools allowing time for this type of teaching to take place in the classroom.

Preventative Peer Led Presentation

Another research study, conducted by LaChausse (2008), also focused on a peer led presentation as a means of education. However, this program showed less favorable results. This program was known as the Fetal Alcohol Spectrum Teaching and Research Awareness Campaign (FASTRAC). There were a total of 114 students involved in the study. This presentation involved a 35 slide PowerPoint presentation which was led by teen peer educators and directed towards ninth through twelfth graders.

Data for the effectiveness of this presentation was evaluated though pre-test and post-test surveys. The survey involved questions concerning attitudes towards drinking
during pregnancy and personal understanding of alcohol’s effect on pregnancy. The data revealed that participants gained valuable information on fetal alcohol syndrome. Although participants gained a better understanding of fetal alcohol syndrome after the presentation, attitudes regarding alcohol use during pregnancy did not change. The results of this study revealed that this presentation had no effect on the participant’s likelihood of using alcohol during pregnancy, perceived dangers of alcohol use during pregnancy, and overall attitude towards alcohol use during pregnancy. Attitude regarding drinking during pregnancy is an important factor to evaluate. If the information is given in an effective and informative way, but the learner’s attitude and actions are not affected, then the education is not effective. Perhaps a presentation with a more emotional approach would help to change the student’s attitudes. Stories about the hardships that children with fetal alcohol syndrome face may help the students understand the severity of the disorder and its lifetime implications.

After further analysis of these results, the researchers felt that the PowerPoint was presented from a biomedical standpoint and should have been more relatable to the target audience. The presentation should have been specifically created for adolescents and taken into account developmental milestones. The peer led program that was utilized in North Carolina proved successful, however, this program, FASTRAC, was not as efficient. Perhaps the more interactive experience involved in the former program led to the success that was lacking in the latter program (LaChausse, 2008). Making the education comprehensible, interactive, and relevant to the learner is crucial for effective education.
**Community-Specific Preventative Campaign**

One educational campaign, focused on fetal alcohol syndrome awareness, created preventative tools that were specific to the target audience. The idea of creating marketing tools for specific demographics is known as “narrow casting” and has already been utilized in commercial marketing (Glik, Prelip, Myerson, & Eilers, 2008). This campaign involved residents from two communities, Bakersfield and Compton, both located in southern California, to assess the effectiveness of two different campaign slogans. Both of the communities used in this study included ethnic minorities and individuals with low income, low educational achievement, and low literacy rates. Each community had a council of individuals who considered the characteristics of the community population and then designed a slogan accordingly. By interviewing individuals in each community, the council was able to discover misconceptions and the community’s awareness regarding fetal alcohol syndrome. Through the council’s interview process, it was found that many individuals in the Compton community had misconceptions about the dangerous effects of beer and wine on pregnancy. Some of the individuals interviewed felt that only liquor had detrimental consequences for the baby. Consequently, for Compton, the message needed to clearly explain the dangers of all types of alcohol. Language and culture were taken into consideration when designing the posters and t-shirts used in the campaign. Through this proper community assessment, a more effective, population-specific campaign was designed (Glik et al., 2008).

Bakersfield geared the campaign towards Caucasian women, African-American women, English-speaking Latinas, and Spanish-speaking Latinas. When individuals on
the council in Bakersfield assessed the community, it was found that residents were confused about the dangers of drinking during pregnancy. Many said that they had received mixed messages about drinking during pregnancy from health care providers, family, friends, and community agencies. Consequently, the slogan and campaign in Bakersfield needed to have very simple and direct messages for community residents (Glik et al., 2008).

For this awareness campaign, posters were placed in various stores, restaurants, clinics, schools, and laundromats throughout both of the communities. Both of the individual campaigns were analyzed to see how well the posters raised awareness. Data were collected from women between the ages of 18 and 35 from clinics and doctor’s offices. The survey intended to look at whether or not women recognized the campaign. While one of the surveys revealed that 54.2% of women in the Compton community recognized the campaign, the Bakersfield survey showed that only 11.2% recognized the campaign. One of the main differences between the two campaigns concerned poster placement. Posters in Compton were placed in many different areas. However, in Bakersfield, many posters were placed, but there were multiple posters in the same location. Using the right setting for educational materials will dictate the success of the campaign. There are many factors to consider when using the narrowcasting method and small factors can have a great impact. However, by focusing on the population and creating community-specific awareness campaigns, knowledge can be spread effectively.
Preventative Nurse Led Workshop for Health Professionals

In 2010, Caley, Riemer, & Weinstein conducted a research study to determine whether or not a nurse-led workshop on fetal alcohol syndrome was an effective means of education. The workshop took place in upstate New York and involved 8 different counties. A registered nurse led the workshop in which 167 health and human service employees were educated on this topic. The workshop took a constructivist approach; a way of learning in which new knowledge, past experiences, and reflection are all involved in the learning process and participants are encouraged to independently think and problem solve. The workshop lasted a total of 3 hours and involved a lecture on the epidemiology and disease process, a presentation by a parent of a child with fetal alcohol syndrome, and a small group discussion. The program focused on educating these professionals on effective interventions that could be used in their individual workplaces. Due to the constructivist approach, the participants were divided into small groups where individuals brainstormed about interventions that could be implemented at their place of work in regards to FAS. Ideas were then shared with the larger group to facilitate new ideas for intervention. Participants also received important information on community resources. Each participant left the workshop with a book on fetal alcohol syndrome, a telephone number to contact for more educational materials, and information for a physician specialist to contact with suspected cases of fetal alcohol syndrome.

The effectiveness of this nurse-led workshop on fetal alcohol syndrome was determined through a post-workshop survey. Although 167 individuals participated, only 37 participants returned the post-workshop survey four months after the study was
completed, as instructed by the researchers. The results of this study show that 61% of the 37 participants were utilizing fetal alcohol syndrome interventions that were addressed in the workshop. The result section states, “The 37 participants who did implement a public health intervention reported undertaking 226 interventions in 74 different worksites within their organizations” (Caley et al., 2010, p.235). In this study, there was a limited number of participants who responded to the post-workshop survey, likely due to the 4 month time span between the workshop and the due date for the surveys. However, the majority of individuals who did respond found the information useful and were utilizing the newly learned interventions. The majority of the interventions that were implemented included primary prevention techniques such as increasing knowledge on fetal alcohol syndrome and making individuals aware of the implications associated with consuming alcohol while pregnant. By reaching many public health employees and disseminating information on community resources, this program proved successful. Interventions were used at a wide range of community locations including hospitals, clinics, community outreach organizations, physician offices, schools, public health cites, nutrition sites, and through Women Infants and Children. This type of education program would be useful for a community that involves several counties and has access to grant money to fund the program.

**Success of Individual Case Manager for Prevention of Fetal Alcohol Syndrome**

Dotson, Henderson, and Magraw took a different type of approach for fetal alcohol syndrome prevention in the state of Montana in 2003. Montana is part of the Four State Fetal Alcohol Syndrome Consortium, which is a specialized coalition that seeks to
better understand the demographics associated with fetal alcohol syndrome and aims to promote prevention efforts. The Montana Department of Public Health and Human Services decided to begin a program through which a case manager from the department is assigned to women who are at risk of having a child with fetal alcohol syndrome. Women assigned a case manager were those women who had certain risk factors putting them at a higher risk of alcohol use during pregnancy. The case manager visited the high risk woman weekly and acted as, “a mentor, health educator, and as a conduit to connect women with other community services” (Dotson, Henderson, & Magraw, 2003, p.759). Women who were offered appointments by this special case manager received this service in addition to other community services. Four different communities that were utilizing this new case manager program were analyzed to rate the effectiveness of the program. The purpose of this program was to assist high risk expectant mothers in the following areas: “social support, family functioning, mental health, general self-efficacy, alcohol use, tobacco use, and other drug use” (Dotson et al., 2003, p.759). Efficacy of the program was to be determined through assessments before case manager visits, at six months of pregnancy, and finally after the baby had been born. Unfortunately, the results were not available at the time of this study. If this program proved effective, health departments may have difficulty funding this type of program due to the need for added employees.

**Preventative Educational Brochure**

Although campaigns and educational programs show promising results in the realm of fetal alcohol syndrome awareness, communities may not have the resources or
financial ability to create these elaborate forms of preventative education. Walker et.al (2005) explored whether or not a simple measure, such as an educational brochure, was effective in promoting fetal alcohol syndrome awareness (Walker et al.). The investigators enrolled 80 women each, each attending one of two community clinics in Michigan. Women who were involved in the study were those requesting emergency contraception or a pregnancy test, revealing that the participants were all sexually active. It is likely that women in college, who are sexually active, and possibly using alcohol would benefit greatly from some sort of education. The participants were asked to take a survey assessing information about demographics and attitude towards alcohol use. When each study participant completed the survey, she was given a brochure on the topic of fetal alcohol syndrome. After the woman had read the brochure, she was given the same survey to complete again. This post-test design may have compromised the validity of the results. The participants could have memorized the correct answers and remembered them only due to the redundancy of the questioning. If this were the case, the woman’s new acquisition of knowledge was not properly assessed.

Researchers used a pre-test and post-test design to judge the effectiveness of the brochure. The results of the study revealed that women who were younger tended to have more tolerant attitudes in regards to alcohol use. Consequently, these younger women drank more beer per sitting than their older counterparts. When analyzing the pre-intervention and post-interventions surveys, the researchers found that the educational brochure had a profound effect on the women’s knowledge in regards to fetal alcohol syndrome. The pre-intervention surveys revealed that young, educated women do not
understand the consequences of alcohol use on pregnancy; there is a need for preventative education in a variety of arenas including these younger women (Walker et al., 2005). Although utilizing a brochure is a simple intervention, it proves to be effective in disseminating knowledge and providing tangible information. One drawback to this study is the fact that women were given a post-survey immediately after reading the brochure. A follow-up survey may have revealed more pertinent results in regards to ability to retain and use the information. This study failed to show how well brochures work in a long term setting, but it does reveal that brochures are an efficient, cost-effective intervention in regards to their ability to be mass produced and easily disseminated.
Table 4

Summary Table of Previously Used Education Practices Related to Fetal Alcohol Syndrome

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Led Preventative Education Program</td>
<td>Utilized demonstrations, PowerPoints, models, videos, and assessment tools in middle schools and high schools.</td>
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<tr>
<td></td>
<td>Pre and post presentation assessments were used.</td>
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<tr>
<td>Peer Led Presentation (Fetal Alcohol Spectrum Teaching and Research Awareness Campaign – FASTRAC)</td>
<td>Led by teen peer educators through use of 35 slide PowerPoint.</td>
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<tr>
<td>Community-Specific Preventative Campaign</td>
<td>Used narrowcasting campaign and posted posters throughout community.</td>
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<tr>
<td>Method</td>
<td>Description</td>
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<td>------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Nurse Led Workshop</td>
<td>Registered Nurse led informational workshop for health care professionals which involved lecture, presentation by parent of a child with FAS, and small group discussion.</td>
</tr>
<tr>
<td>Individual Case Manager</td>
<td>Case managers were assigned to women at high risk of having a child with FAS and provided frequent visits.</td>
</tr>
<tr>
<td>Preventative Educational Brochure</td>
<td>Pamphlet given to women visiting clinic for sexual health services and pre/post intervention surveys were completed to evaluate effectiveness.</td>
</tr>
</tbody>
</table>
Individuals can read the brochure at their own convenience and can have a resource to take home.

| Note. Information for the above table was extrapolated from Boulter (2007), Caley et al. (2010), Dotson, Henderson, & Magraw,(2003), Glik et al. (2008), LaChausse, (2008) and Walker et al.(2005).The 6 programs listed above have been implemented to help decrease the incidence of fetal alcohol syndrome in a variety of location across the United States. The programs vary by method, location, year, and overall effectiveness.

Lessons from Former Education Programs

By looking at former educational pursuits with fetal alcohol syndrome, areas of effectiveness and areas for improvement can be noted. After looking at these 6 educational programs and tools that have implemented, a variety of conclusions can be made. According to these past programs, effective education is interactive, audience-specific, and relevant to the learner. Education was more effective when careful attention was paid to the placement of educational posters and the location for teaching. While it is helpful to use the positive aspects of former education in future education, it is also helpful to look at flaws in former education. After looking at these past programs, it is evident that the information needs to be interesting and applicable to the learners’ lives. It can also be concluded that interactive education with discussion and activities is more
effective than education that involves only lecture or PowerPoint. The information must be disseminated in a way that is appropriate for the audience. For example, the preventative peer led presentation was less effective because it was told from a biomedical standpoint. An effective presentation should appeal to the audience on an ethical, logical, and emotional level. After assessing these programs and looking at pros and cons, future education can encompass the strengths and exclude the weaknesses of these former ventures, thereby creating a plan for effective education.
CHAPTER 3
COMMUNITY ORGANIZATIONS IN SUMMIT COUNTY

Statistics on Summit County

Individual counties and communities have unique needs for fetal alcohol syndrome prevention education. It is important that health officials consider the demographics and statistics associated with the community so that appropriate education tools can be utilized. Summit County, in the state of Ohio, is in need of preventative education tools for fetal alcohol syndrome. In 2010, 6,096 babies were born in Summit County, the fifth highest number of births by county in the state (Ohio Department of Health, 2010). Education in an area with a high birth rate would be wise so that more children can benefit. Summit County is an urbanized area, approximately one hour south of Cleveland, with a population of 540,000 (Summit County Quick Facts). Information on how many cases of fetal alcohol syndrome are diagnosed per year in Ohio is unavailable; however, data are collected on certain characteristics and behaviors of pregnant women in general. Through PRAMS, the Pregnancy Risk Assessment Monitoring System, Ohio collects vital statistics on numerous topics regarding pregnancy and shares the results according to county. Information regarding maternal age, race, education, marital status, insurance, and previous births are all included in this data collection system. Although this demographical information is useful, information is also collected on certain behaviors during pregnancy. Behaviors such as multivitamin use,
smoking, and alcohol use are also included in the PRAMS data (Ohio Department of Health, 2012).

Summit County may not collect information about fetal alcohol syndrome specifically, however, through the PRAMS data, information on demographics and behaviors during pregnancy are available as an estimate. Through this information, the risk of fetal alcohol syndrome can be conjectured. For example, the PRAMS data report that in 2010, 6.7% of women who were surveyed stated that they used alcohol during the last three months of pregnancy. Collection of data on this topic is available from the years 2005 to 2010. By looking at the trend over the past 5 years, perhaps success of community education and campaigns can be determined. PRAMS also collected data on whether or not women were educated on the effects of alcohol use on their baby. In 2010, 70.7% of women stated that they were educated on the effects that alcohol could have on their baby. Although the data alone may seem insignificant, when looking at trends and its’ relationship with other factors, certain conclusions can be drawn. For example, in 2007, 72.2% of women stated that they were educated on the effect of alcohol during pregnancy. In this same year, only 5.2% of women disclosed alcohol use in the last three months of pregnancy (Ohio Department of Health, 2012). There appears to be a relationship between the year with the highest percent of women educated and the least amount of women consuming alcohol during the last three months of pregnancy. Unfortunately, PRAMS relies on a small sample size and self-report is used as the means of data collection. Due to the small sample size, the findings cannot necessarily be generalized to the great population and self-report makes the data somewhat unreliable.
because it is left up the participant’s discretion. However, it is a database in which information has been collected consecutively for the last 5 years and is a reliable source of pregnancy data in regards to Summit County (Ohio Department of Health, 2012).

Figure 1

![Ohio PRAMS Data](image)

**Figure 1.** Data for this figure was extrapolated from the PRAMS data collected from the Ohio Department of Health (2012). The figure above shows the relationship between prenatal education on alcohol use during pregnancy and the mother’s use of alcohol during pregnancy. The percentage represents the percent of patients that the prenatal care provider talked with about the effects of alcohol on their baby.

**Current Organization and Associated Preventative Education in Summit County**

Based on the lack of statistical data in Summit County on fetal alcohol syndrome specifically and on associated education, there was a need to examine preventative education techniques used in agencies throughout the county. Information was obtained
through e-mail from six different organizations located within Summit County. The organizations ranged from pregnancy care clinics to organizations dedicated to individuals with substance abuse issues. By contacting these organizations information about the agencies’ clientele and education methods was obtained.

**Akron Community Health Resources Incorporated**

Akron Community Health Resources Inc. is located in Akron within Summit County. This agency provides a variety of medical services including gynecology, family planning, pediatrics, and sexually transmitted disease testing and treatment. The agency is publicly funded through grants. When asked about fetal alcohol syndrome education tools, an agency representative explained that currently the agency does not have any specific education tools related to fetal alcohol syndrome but would be more than willing to use them. (T. Wood, personal communication, January 29, 2013).

**Alcohol, Drug Addiction, and Mental Health Services Board**

One organization known as the Alcohol, Drug Addiction, and Mental Health Services Board (ADM Board) is located in Summit County and seeks to help individuals dealing with addiction and mental illness. The organization focuses on prevention and treatment by providing affordable services to individuals in Summit County. The ADM Board recognizes that, “addictions are treatable diseases” and seeks to help individuals overcome addiction (Alcohol, Drug Addiction & Mental Health Services Board). When asked about fetal alcohol syndrome education materials, the ADM Board representative responded, “The ADM Board does not currently circulate literature on fetal alcohol syndrome” (P. Rabinowitz, personal communication, May 14, 2012). However, the
representative said that the organization would be willing to use materials if they were offered. There is a need for preventative education on this subject within agencies that assist individuals dealing with addictions. One study by Leonardson and Loudenburg (2003) concluded that, “previous participation in substance abuse treatment programs” was indicative of a higher risk of alcohol use during pregnancy (p.657). Due to this relationship, preventative education materials on fetal alcohol syndrome should be distributed at agencies such as the ADM Board.

**Pregnancy Centers in Summit County**

Other agencies that were contacted involved those that assist pregnant women specifically. The Community Pregnancy Center, Pregnancy Care of Summit County, and Planned Parenthood are all dedicated to helping individuals residing in Summit County. The Community Pregnancy Center is a Christian organization (CPC). The representative from this organization said that although they do teach their expectant mothers about the dangers of alcohol and drugs in their prenatal class, currently, they do not distribute specific information on fetal alcohol syndrome (D. O’Neill, personal communication, May 10, 2012). Pregnancy Care of Summit County, another pregnancy center, is a non-profit organization that provides free services to pregnant women in Summit County. This agency helps expectant mothers through educational classes, pregnancy tests, and emotional support (Welcome to Pregnancy Care of Summit County). Pregnancy Care of Summit County has a prenatal class focusing on the detrimental effects that alcohol and drugs can have on pregnancy. They also have a teen prenatal class dedicated to the same topic. The representative from this agency mentioned that they would be interested in an
educational brochure (R. Baker, personal communication, May 10, 2012). Planned Parenthood was also contacted. Planned Parenthood is a nationally recognized organization that has a location within Summit County. Planned Parenthood is known as “The nation’s leading sexual and reproductive health care provider and advocate” (Sexual & Reproductive Health). The northeast Ohio branch of Planned Parenthood does not offer prenatal care but does provide education and referrals to their clients. Planned Parenthood is unable to use this fetal alcohol syndrome educational brochure because all education materials must be approved by the national headquarters.

**Women, Infants, and Children**

Women Infants and Children [WIC], a community organization, was also evaluated for preventative education related to fetal alcohol syndrome. Women Infants and Children is an agency dedicated to supporting mothers and children up to five years of age. WIC focuses on nutritional needs but also teaches mothers about other medical topics. Topics such as immunizations, nutritional needs, normal growth patterns, and the benefits of breastfeeding are all discussed through this program. Due to WIC’s personal contact with pregnant women, it is an ideal venue for prenatal education. Upon contacting the WIC location in Summit County, the representative explained that they do distribute information on fetal alcohol syndrome in the form of brochures. After viewing multiple samples of the brochures WIC utilizes, it was clear that the materials were outdated. However, WIC has found that brochures are an effective way to teach expectant mothers about this topic. WIC stated that they would be unable to use a new educational
brochure on fetal alcohol syndrome unless it was approved by the Ohio Department of Health.

Table 5

_Agencies Located in Summit County_

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Funding</th>
<th>Services</th>
<th>Current Education on FAS</th>
<th>Interest in Using Brochure (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol, Drug Addiction, and Mental Health Services Board</td>
<td>100 W. Cedar Street, Suite 300 Akron, OH 44307</td>
<td>Public (Local, State, and Federal) and Private</td>
<td>Assists individuals in finding treatment for alcohol, drug addiction, and mental health issues.</td>
<td>No information currently distributed on FAS.</td>
<td>Yes</td>
</tr>
<tr>
<td>Akron Community Health Resources Incorporated</td>
<td>1400 S. Arlington Street Akron, OH 44306</td>
<td>Public (Grants)</td>
<td>Provides dental and medical services including gynecology, family planning, and pediatrics. Accepts Medicaid, Medicare, and has sliding scale fees for low income families.</td>
<td>No information currently distributed on FAS.</td>
<td>Yes</td>
</tr>
<tr>
<td>The Community Pregnancy Center</td>
<td>1058 Wooster Rd W Barberton, Ohio 44203</td>
<td>Private</td>
<td>Provide emotional, material, and educational support to pregnant women.</td>
<td>No information currently distributed on FAS.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**Summary of Current Fetal Alcohol Syndrome Education in Summit County**

After looking at many of the agencies that exist in Summit County, it is clear that while a few educate on fetal alcohol syndrome, some of these agencies do not provide the education to clients. Although some of the agencies do not educate on the topic, most

<table>
<thead>
<tr>
<th>Planned Parenthood of Northeast Ohio</th>
<th>444 West Exchange Street Akron, OH 44302</th>
<th>Public and Private</th>
<th>Refers clients to local pregnancy agencies, provides education, and offers supportive services.</th>
<th>Currently have health educators who speak on FAS.</th>
<th>No – All educational materials would have to be approved by the national headquarters.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy Care of Summit County</td>
<td>195 E. Tallmadge Ave Akron, Ohio 44310</td>
<td>Private</td>
<td>Provide emotional, material, and educational support to pregnant women.</td>
<td>Currently have a speaker who talks about FAS in prenatal classes but do not distribute educational FAS brochures.</td>
<td>Yes</td>
</tr>
<tr>
<td>Women, Infants, and Children</td>
<td>2891 East Waterloo Road, Suite D Akron, OH - 44312</td>
<td>Public (State)</td>
<td>Supports pregnant women and children up to age 5 by providing nutrition, education, and referrals for health and human services.</td>
<td>Currently distribute education materials on FAS.</td>
<td>No – All educational materials would have to be approved by the Ohio Department of Health.</td>
</tr>
</tbody>
</table>

*Note. While Women, Infants, and Children does currently distribute education materials on fetal alcohol syndrome, they were published in 1999, over 12 years ago.*
agencies were interested in using an educational tool if one were offered to them. Many education strategies related to fetal alcohol syndrome were discussed previously. Some programs involved teaching in schools, campaigns with attractive slogans, or the education of health care professionals. In Summit County, there are already a number of agencies dedicated to helping low-income pregnant women, pregnant women with addictions, and pregnant women in need of emotional support. These agencies may not all currently distribute information, but they are ideal venues for prenatal education. The organizations already have a strong rapport with the public and have contact with a vast amount of pregnant women on a daily basis. After analyzing previously used education strategies, an educational brochure is the ideal form of education for Summit County. One piece of educational material could be utilized in agencies across the county. The educational brochure should be audience-specific according to the demographics of women in Summit County in order to increase its’ success. In the Walker et al. study, involving the use of a pamphlet in 2 Michigan clinics, the results were very promising. The study revealed that a simple, inexpensive intervention such as a brochure had a profound effect on the women’s knowledge (Walker et al., 2005). This cost effective and successful intervention would work well in Summit County.
CHAPTER 4
EFFECTIVE EDUCATION

Creating an Effective Brochure

There is a need for an educational tool in Summit County due to the incidence of alcohol consumption during pregnancy and the lack of education tools in certain agencies throughout the county. It is estimated that 757,000 women drink alcohol when pregnant each year throughout the United States (Statistics: American Pregnancy Association). In the 2010 PRAMS report, specific to the state of Ohio, 6.7% of pregnant women said they used alcohol during the last three months of pregnancy (Ohio Department of Health, 2012). When looking at these statistics, it can be assumed that there is also a need in Summit County, especially with the current lack of educational tools in local agencies. Data on the incidence of fetal alcohol syndrome specifically in Summit County is not available; however, this information would be useful to measure the success of certain education tools and practices.

One of the most important factors determining the effectiveness of a brochure is the accessibility of the educational tool to the public. By making the brochure available in agencies throughout Summit County, the brochure will be accessible to the public. However, providing the brochure at no cost to the agencies increases the likelihood that the agencies will display and distribute the informational brochures. The brochure that will be created for Summit County will not be trademarked or copyrighted. By doing this, the agencies will be able to make copies of the brochures as needed at no cost. By
allowing the agencies to copy and distribute the brochures free of charge, the likelihood of use and efficiency increases dramatically.

**Successful Education**

A brochure seems to be the more appropriate method for disseminating fetal alcohol syndrome education in Summit County after looking at other educational tool that have been utilized across the United States. Due to the many agencies that have already been established, educational brochures can be easily distributed through these settings. The demographical information collected from the agencies in Summit County suggests that the brochure should be created for a low literacy audience. The brochure will be written in English; however, Pregnancy Care and Akron Community Health Resources Inc., also serve many Hispanic clients and would benefit from a brochure translated into Spanish.

Although demographic information is beneficial when designing an audience-specific brochure, factors such as graphics, text, and overall organization are also significant. There is little research on exactly what aspects of a brochure determine its success. The purpose of a brochure is to disseminate new information in a coherent and organized manner. Through an article focused on creating effective brochures, Chesanow (2000) explains that color, text, paper, and graphics can determine the success or failure of a health information brochure. Depending on color combinations used in the brochure, the audience may view the message as urgent, important, or even trivial. Chesanow also explains that there are ways to ensure that the brochure will be utilized. For example, he suggests that health care providers write the patient’s name on the brochure before
handed it to them to prevent the patient from leaving it in the office or waiting room. Also, having the health care professional physically give the brochure to the patient shows that he or she values the information and feels that it is important information for the patient to consider. He also suggests using the pronoun “you” throughout the brochure and explains that bullet points and subheadings can make reading easier for the patient. Pictures that will be used in this fetal alcohol syndrome prevention brochure will be found in the public domain on the internet. Since these pictures are not copyrighted, they can be freely used in non-profit education. After determining that a brochure is the right form of education for Summit County, it is important to consider these meticulous formatting details and distribution measures to ensure the brochure’s success.

Population-Specific Education

Information regarding the demographics associated with mothers of children with fetal alcohol syndrome is very difficult to discern. The CDC reports, “Between 2001 and 2005, the highest rates of alcohol consumption during pregnancy were among individuals who were employed, unmarried, college graduates, and between the ages of 35-44” (2012). These data were collected through self-report and therefore open to inaccuracies. With self-report data, the information is given at the participant’s discretion and may be influenced by stigma or embarrassment. The data collected by the CDC may be accurate or perhaps these groups of people were simply more truthful in reporting alcohol use during pregnancy. It is possible that participants did not fully disclose information about their alcohol use during pregnancy. There is also little revealed about the sample that the CDC used; perhaps surveys were inadvertently given to specific social groups.
Audience-targeted education in regards to fetal alcohol syndrome is especially challenging due to lack of information on associated demographics. Characteristics of mothers who have children with fetal alcohol syndrome seem to vary according to geographic location. This has been substantiated through comparison of research at the CDC (2012) and smaller individual studies. There is a definite variability when compared. The CDC’s conclusions on associated demographics vary from the conclusions of smaller, individual studies. With this in mind, Summit County’s education on fetal alcohol syndrome would benefit from being made specifically for the community. National conclusions do not take into account individual factors in a community. When researching fetal alcohol syndrome, it is better to look at the microcosm rather than the macrocosm. Instead of basing the educational brochure for Summit County on these national conclusions, the tool should be based on the patient characteristics associated with the individual agencies in Summit County. If the agencies can disclose information about the demographics of their clients, then the brochure can be made audience-specific. Since little information is known about the association between demographics and fetal alcohol syndrome in general, the educational brochure should simply be conducive to the patient population that the agency serves. The venues for this educational brochure in Summit County have revealed that their patient populations consists of low income individuals with minimal education, who are unmarried. The brochure should be created with this patient population in mind. Although the CDC concludes that the associated demographics involve unmarried, employed, and individuals with college degrees, this does not correlate well with the patient population
being served in Summit County. Therefore, the brochure should be based on the patient population being served in Summit County rather than the national statistics. In order to make a successful brochure for Summit County, information on demographics was collected from a few agencies in Summit County.
CHAPTER 5

DEMOGRAPHICS FROM SUMMIT COUNTY COMMUNITY AGENCIES

Demographics from the Alcohol, Drug Addiction and Mental Health Services Board

The ADM Board of Summit County does not record specific demographical information about their client population. However, Paula Rabinowitz, a services coordinator for the program, was able to give some information about the ADM Board’s clientele. She explained that information that is distributed to this client population should be at or below a fifth grade reading level. She explained that individuals may have difficulty with complicated words so simple language should be used. She also explained that effective literature that they currently use at the ADM Board is concise. A concise educational brochure will help prevent the client from feeling overwhelmed with new information. Paula Rabinowitz also mentioned that visual appeal is important. All of these factors can be taken into account when creating an efficient educational brochure (P. Rabinowitz, personal communication, November 12, 2012).

Demographics from Akron Community Health Resources Incorporated

Akron Community Health Resources Incorporated, like the ADM Board, does not collect specific information regarding patient demographics. However, Tina Wood, an administrator at Akron Community Health Resources, has noticed certain trends. The agency has many low income clients and accepts Medicare, Medicaid, and provides a sliding fee program. Tina Wood explained that approximately 40% of their patients use Medicaid while the other 60% is uninsured or commercially paid. She also stated that
they treat a diverse population ranging from all ages. She explained that many of their clients are Spanish-speaking (T. Wood, personal communication, January 29, 2013).

**Demographics from Community Pregnancy Center**

Community Pregnancy Center in Summit County disclosed the demographics associated with their patient population. The information was collected in 2011 through a patient survey. Community Pregnancy Center served a total of 1,865 clients in 2011 with the majority of patients ranging from 20 to 24 years of age. Caucasian and African American clients were the most frequently served ethnicities accounting for 67.72% and 24.88% respectively. The majority of clients served, 79.46%, spoke English. Information regarding sex, education level, marital status, religion, and income were also collected using a sample of 857 clients. The data conclude that single, Christian, high school educated, females account for the majority of their patient population. The data included 857 participants and 244 of these individual were on welfare while 184 clients earned $0-$14,000 annually (D. O’Neill, personal communication, May 31, 2012). When considering an educational brochure for this patient population, the age and educational level are important factors to consider.

**Demographics from Women, Infants, and Children**

Although detailed accounts of the client population for Community Pregnancy Center were available, Women, Infants, and Children [WIC] does not collect specific demographical information on their client population (Alisa Charles, personal communication, June 12, 2012). However, research has proven that WIC is a cost effective program that reaches a large number of women and infants each year. In 2011,
it was estimated that 63,545 women and 69,930 infants were served by this organization (Women, Infants & Children). The WIC program in Ohio is one of the top ten largest WIC programs in the United States. The program is completely federally funded and has shown improved health outcomes for infants and children. Due to the large client population that WIC serves, this organization would be an optimal venue for distribution of the educational brochure. By using a renowned organization like WIC, brochures can be distributed and the information will be trusted.

Demographics from Pregnancy Care of Summit County

Pregnancy Care of Summit County currently does not keep record of specific demographics associated with their patient population. However, a patient care coordinator was able to share information about the patient population through her own clinical experience. She explained that the pregnancy center is located next to an agency that specializes in helping international individuals; therefore, Pregnancy Care has a culturally diverse patient population. She stated that their patient population consists of mainly Caucasian and African Women. However, they also treat many Hispanic individuals and a small number of Asian women. All of the women receiving care at this agency are of low socioeconomic with many receiving government assistance. The majority of patients are between the ages of 20 and 28 years old but overall patients range from 13-45 (R. Baker, personal communication, June 22, 2012).
CHAPTER 6
IMPLEMENTING EDUCATION

Distribution of Brochures

In many communities, it is difficult to find venues through which teaching materials can be distributed. Often times, health-related information can be disseminated through churches, schools, and clinics. In Summit County, the fetal alcohol syndrome information can be easily distributed through public health agencies which are well-developed and have a good rapport with the public. By having reputable and informed organizations distribute the information, the public will trust the information and be more apt to adhere to the recommendations. Many of the agencies contacted throughout Summit County are willing to distribute the population-specific brochure including: the Akron Community Health Resources Inc., The Alcohol, Drug Addiction, and Mental Health Services Board, Community Pregnancy Center, and Pregnancy Care of Summit County. By using these renowned agencies as a means for distributing the health information, the likelihood of success with the brochure increases. Through the brochure and the use of the reputable agencies, successful education on fetal alcohol syndrome in Summit County is very plausible.

Obstacles to Education

When trying to utilize audience-specific education, discerning the best approach proves difficult. After analyzing demographics associated with the target population, an informed decision can be made in regards to the best venue for education. Although this
selection process can be challenging, implementation can impose even greater obstacles. Factors such as access to updated education materials, available venues for education, and budgetary limitations are all relevant concerns when considering preventative health education. Education materials can be expensive and health information is constantly changing. Creating these educational materials and keeping them current can be costly. Finding agencies in the community who are willing to distribute materials or gaining approval from schools to teach in the classroom can be very problematic. Often times, schools use an abstinence only approach to sexual education and may not be willing to address a topic such as fetal alcohol syndrome. However, according to previous studies, women over 30 are most at risk for alcohol use abuse during pregnancy. Therefore, educational tools in public health agencies treating older women may be more effective than implementing an educational tool in schools. By knowing the demographics associated with fetal alcohol syndrome and the characteristics of the population in the community, effective programs and educational tools can be utilized in a cost effective manner.
CHAPTER 7
CLOSING REMARKS

Future Research

In order to create successful and cost effective educational tools and programs, information regarding the demographics associated with fetal alcohol syndrome must be collected and analyzed. However, the collection and analysis proves to be a difficult process. The demographics associated with fetal alcohol syndrome seem to vary according to location. These changing demographics indicate that results from one specific location cannot be easily generalized to larger areas. For example, if an educational tool was created based on data regarding demographics for a specific county in Ohio, it cannot be assumed that this tool would be successful for other counties due to the changing demographics. The principle of a microcosm in a macrocosm does not apply well in this situation. Due to the changing demographics, many studies will have to be completed in smaller geographical locations so accurate data can be collected and appropriate programs can be implemented.

Previous data on fetal alcohol syndrome does exist, but much of it is outdated. New data collection and analysis is necessary. Future research should be conducted in a variety of smaller locations and then the data should be analyzed for trends in states or nationwide. Data collection should begin in counties or states in which the incidence of fetal alcohol syndrome is high. Information on women who have children with fetal alcohol syndrome can be difficult to collect because often the children no longer live with
their biological mother (Cannon et al., 2012). Although a study on this topic is challenging, it is absolutely necessary. If quality studies are conducted and fetal alcohol syndrome educational tools are made accordingly, women will become informed mothers and the incidence of fetal alcohol syndrome will decrease.

**Future Education Program**

Although an educational brochure seems to be the best option for Summit County at this time, perhaps a more in depth approach to education could also be effective in the future. The use of an educational brochure was chosen for Summit County because it is cost effective and can be used at a variety of different agencies; thereby reaching more people. However, if more funding were to become available or the educational brochure alone did not prove effective, an educational program on fetal alcohol syndrome could be implemented. Although a program would require more funding and resources, a program could prove more effective than a brochure.

When designing a fetal alcohol syndrome educational program for Summit County, some ideas found in Caley, Riemer, and Weinstein’s (2010) study could be utilized. This study consisted of health care professionals in New York who were educated through a nurse-led workshop. A few ideas from this study could work well in Summit County. In this study, participants received educational materials that could be used at their respective organizations. Secondly, participating individuals received contact information for community resources that could help individuals dealing with alcohol abuse while pregnant. These two factors help to inform health care professionals and gives them a means for educating others. It would be more effective to educate health
care professionals than it would be to educate individual clients. Health care professionals have contact with many clients in the course of a day, so educating professionals rather than individuals will help with networking. The key in any successful education program is to reach as many individuals as possible. Through an effective education program for area health professionals, many residents of Summit County could be reached by utilizing the key components from this study and tying them into education.

Studies have been completed that address the knowledge and challenges that health care professionals face in regards to fetal alcohol syndrome. Sharpe et al. (2004) has mentioned that, “Recent research has suggested that some providers might not be sure of the appropriate prevention and intervention messages to convey” (p. 134). The investigators found that health practitioners often did not screen due to time restraints, lack of available treatment facilities for alcohol abuse, fear of stigmatizing, and lack of services for people diagnosed with fetal alcohol syndrome (Sharpe et al., 2004). If health care professionals know of resources in their communities to which clients can be referred and treated, then health professionals will likely share this information with their clients. However, due to the time restraints that busy health professionals face, searching for treatment centers or researching available community resources for clients with fetal alcohol syndrome may not be plausible. Consequently, an effective solution would involve a program in which lists of services provided by community organizations, contact phone numbers, and brochures are made available to health care professionals to distribute to clients. Health professionals from a variety of disciplines would be involved
in the program such as nurses, doctors, social workers, and public health employees. By involving multiple disciplines, more individuals across the health fields can be informed.

As previously mentioned, this type of program is more comprehensive than the mere distribution of an educational brochure. Although the program would describe basic physiology, diagnosis, and treatment of fetal alcohol syndrome, the main purpose of the program is to raise awareness about available treatment and service centers for clients with fetal alcohol syndrome. This type of program would require time, research, funding, participation of health care providers, and a health educator. However, the program does not require continuous repetition because the information will remain relatively stable. The educational program being described would only require 1 training session every 5 years. In the nurse-led workshop mentioned in Caley, Riemer, and Weinstein’s (2010) study, the participants were also given numbers to call if they needed more printed brochures or handouts for clients. This type of service would help sustain the information taught at the educational session.

**Conclusion**

Researchers from the CDC have concluded that alcohol exposure during pregnancy is the leading preventable cause of birth defects and developmental disabilities. There is little information on the extent of this problem in the United States. To date, data collection on this topic has been limited. The first step in addressing any problem is to understand the extent and implications of the problem. Interventions cannot be decided upon until appropriate data collection has occurred. Researchers at the CDC (2010) note, “Rates of harmful drinking among women from diverse populations and the
characteristics of those at greatest risk are not well understood. Well-designed epidemiologic studies are needed to better understand these populations of women” (Preventing Alcohol-Exposed Pregnancies in Diverse Populations, para. 1). Professionals at the CDC have funded some isolated surveillance studies related to fetal alcohol syndrome. Currently, these fetal alcohol syndrome surveillance studies exist in Arizona, Colorado, and New York through state public health departments. Investigators at the CDC have never initiated surveillance or planned interventions related to fetal alcohol syndrome in Ohio.

Due to limited data, it is difficult to decipher what would be essential for effective education. The first step in preventative education may be programs at smaller, local levels. After looking at past FAS intervention programs that have been utilized across the United States, the 2005 research study involving the educational brochure is most conducive to Summit County. While analyzing current fetal alcohol syndrome education in Summit County, it was concluded some of the agencies lacked any formal fetal alcohol syndrome education. Providing these agencies with educational brochures to distribute and offering current materials were deemed appropriate actions. Since there is a lack of data on demographics associated with FAS, information was collected on demographics of patient populations that these agencies serve. By utilizing the information collected from the various agencies in Summit County, the likelihood of effective education via the brochure was greatly enhanced.

The use of an educational brochure on this topic may seem like a small intervention, but when addressing a community problem, awareness is key. If the topic of
fetal alcohol syndrome is broached in the community then action can take place. If residents could become informed and motivated, then perhaps larger steps, such as prevention programs be initiated. This small intervention involving the brochure can have significant implications for the future. With the current health care crisis in the United States, reducing the budget and utilizing cost effective interventions is a necessity. Primary prevention involving education is the future of health care. Preventing disease rather than treating disease is simply more cost effective. However, in regards to cost, the emotional and psychosocial price that children with fetal alcohol syndrome pay cannot be understated. The incidence and impact of fetal alcohol syndrome needs to be analyzed and addressed in research and practice. Surveillance and interventions need to be addressed at federal, state, and local levels. The research and the application of interventions should be a priority to stem the epidemic that is fetal alcohol syndrome.
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Appendix 1
Oral Defense Presentation

Slide 1

A Preventable Epidemic in the United States: A Study of the Demographics and Educational Practices Associated with Fetal Alcohol Syndrome (FAS)

BY: EMILY ROSENLEB
ADVISOR: CONNIE TEZIE DNP, NP-C

Slide 2

Why FAS?
- First day of labor and Delivery
  - Frustration vs. Compassion
- Leading cause of Mental Delay in America
- 1 in 100 pregnancies (NOFAS)
- Lack of Awareness in Society
- Absolutely PREVENTABLE
Slide 3

Lifetime Implications of FAS

- Below 10th percentile for growth
- Visual impairment
- Low IQ
- Psychological
  - Hyperactivity
  - Impulsivity
  - Difficulty with social skills
  - Anxiety
  - Depression
- Physical malformations (Larkby, 1997)
  - Microcephaly
  - Smooth philtrum
  - Short palpebral fissures

Slide 4

Financial Implications

- Lifetime Cost = $2,000,000
- Cost to United States = 4 billion dollars per year

Financial implications may be of interest to the government.
- The government may be more interested to take action if the U.S. budget is being negatively affected by the cost of Fetal Alcohol Syndrome.
Slide 5

Major Findings

- Lack of Surveillance
  - Possibly underreported (May and Gossage, 2011)

- Barriers to Diagnosis
  - Subtle symptoms
  - Stigma (mothers disclosure of alcohol use)
  - Lack of Treatment Options
  - More Treatment Options = more motivation to diagnose

Slide 6

Major Findings

- Discrepancies between National and Individual Study Conclusions

  National Studies
  - More likely to drink alcohol if:
    - 35-44 years old
    - College graduate
    - Employed
    - Unmarried

  Individual Studies
  - Minimal education = increased alcohol during pregnancy
  - Marital status, high income rates likely to drink
  - 30 or older = more likely to drink alcohol during pregnancy
  - Younger women more prone to higher alcohol use (Walker et al., 2005)
Slide 7

Major Findings

- Barriers to Education
  - Lack of Data
  - Funding
  - Accessible Venues
  - Challenges to Education in Schools

- Challenges to Education in Schools
  - Lack of Funding

History of Bills

- S. 536 - National Fetal Alcohol Spectrum Disorders Awareness Day
- February 7, 2013 – 53RD
- Advancing FASD Research, Prevention, and Services Act

Slide 8

Community Influence

- 6 Agencies Contacted
  - ADM Board
  - Akron Community Health Resources Incorporated
  - Community Pregnancy Center
  - Planned Parenthood
  - Pregnancy Care of Summit County
  - WIC

Agencies were queried:
- Do you currently educate on FAS?
- Would you be willing to use an educational brochure on FAS?
- Describe your patient population.

- Lack of Data
  - Use demographics of patient populations to create customized education brochures
  - Spanish translation – By: Victoria Piermarini
Future Research

- Funding
  - Preventive education programs (schools)
  - Support groups for expectant mothers with substance abuse (Dotson et al., 2003)
  - Educating health care professionals (Caley, Riemer & Weinstein, 2010)
  - Specialized education for children with FAS (More research on learning needs)

- Surveillance
  - Accurate surveillance = funding
  - Determine accuracy of intervention
Appendix 2

Fetal Alcohol Syndrome Brochure – English

How do I protect my baby from Fetal Alcohol Syndrome?

Fetal alcohol syndrome is a completely preventable disorder. If a woman does not drink during pregnancy, then her baby will not suffer from this disorder. It is important that women who are trying to become pregnant avoid alcohol as well. Important steps in the baby’s development happen in the first few weeks and throughout pregnancy. Avoiding alcohol while pregnant may be difficult for some women, but there are community resources that can help.

When feeling the urge to drink alcohol during pregnancy, consider distracting yourself or finding another way to relax. Here are a few ideas:

- Read a book
- Watch TV
- Go for a Walk
- Take a Bath
- Listen to Music
- Take Deep Breaths

“Fetal alcohol spectrum disorders are completely preventable if a woman does not drink during pregnancy.”

– Centers for Disease Control

Five Facts to Know:

1. Fetal alcohol syndrome is completely preventable.
2. Fetal alcohol syndrome cannot be cured.
3. When a pregnant woman drinks alcohol, the unborn baby also drinks the alcohol.
4. There is no safe time to drink during pregnancy.
5. Any drink that contains alcohol may harm the unborn baby.

Protect your baby.

Avoiding Alcohol During Pregnancy: A Good Decision

Place Patient Label or Insert Client’s name here.
There is no known safe amount of alcohol to drink while pregnant.

Center for Disease Control

Available Resources

Alcoholics Anonymous:
*Offer group meetings and support for those dealing with alcohol abuse issues.
Phone: 315-245-6111
Website: http://www.aa.org

Alcoholics Anonymous Helpline:
*Call for information on getting help with alcohol addiction.
Phone: 800-447-4000
Website: http://www.niaaa.nih.gov

Fetal Alcohol Syndrome:
*Mental disability

Physical Abnormalities

Behavior Problems

Low Intelligence

Heart Problems

Face Problems

Stunted Growth

What is Fetal Alcohol Syndrome?

A woman drinking any type of alcohol during pregnancy is not safe for the unborn baby.

When a mother drinks alcohol during pregnancy, the baby also drinks the alcohol through the umbilical cord.

When the baby receives this alcohol, the baby can experience harmful effects.

If a mother drinks alcohol during pregnancy, the baby has a greater risk of having fetal alcohol syndrome or a less severe form known as fetal alcohol effects.

Frequently Asked Questions:

Question: Is there a certain time during pregnancy when consuming alcohol is safe?
Answer: No. There is no safe time to drink alcohol while pregnant. While a mother is pregnant, the baby is continually developing.

Question: Is there a certain type of alcohol that is safe to consume while pregnant?
Answer: No. Any drink that contains alcohol can be harmful to the baby. Wine, beer, and liquor can all cause problems for the baby.

Question: Are there organizations that can help me avoid drinking alcohol and support me during pregnancy?
Answer: Yes! Talk to your doctor or health care provider about resources in your community. Many organizations offer education materials or support counseling. Together with these resources, you can protect your baby.
Appendix 3

Fetal Alcohol Syndrome Brochure – Spanish

¿Cómo protejo a mi bebé del síndrome alcohólico fetal?

El síndrome alcohólico fetal es un trastorno totalmente prevenible. Si una mujer no toma bebidas alcohólicas durante el embarazo, su bebé no sufrirá de este trastorno. Es importante que las mujeres que están menstruando quedarse embarazadas eviten el consumo de alcohol. Hay pasos importantes del desarrollo del bebé que suceden durante las primeras semanas y a lo largo del embarazo. Evitar el alcohol durante el embarazo puede ser difícil para algunas mujeres, pero hay recursos comunitarios que pueden ayudar.

Al sentir las ganas de tomar alcohol durante el embarazo, considera llamar a un cabrestante o buscar otras maneras de relajarse. Aquí hay algunos ideas:

- Leer un libro
- Mirar la tele
- Salir a pasear
- Darles un baño
- Escuchar música
- Respirar profundamente

"Los trastornos del espectro alcohólico fetal son totalmente prevenibles si una mujer no toma alcohol durante el embarazo."

— Consejo para el Control de Enfermedades

Cinco hechos que debes saber:

1. El síndrome alcohólico fetal es totalmente prevenible.
2. El síndrome alcohólico fetal no tiene cura.
3. Cuando una mujer embarazada toma alcohol, el bebé toma alcohol también.
5. Cualquier bebida que contenga alcohol puede hacer daño al bebé antes de nacer.

Protege a tu bebé y ayuda a tener un comienzo sano.

Evitar el alcohol durante el embarazo.
Una buena decisión
No se conoce una cantidad segura de alcohol que se pueda tomar durante el embarazo.

Centros para el Control de Enfermedades

¿Qué es el síndrome alcohólico fetal?

No hay ningún tipo de alcohol que una mujer pueda tomar durante el embarazo que sea seguro para el bebé. Cuando una madre toma alcohol durante el embarazo, el bebé también toma el alcohol a través del cordón umbilical. Este alcohol puede hacerle daño al bebé. Si una madre toma alcohol durante el embarazo, el bebé tiene mayor riesgo de tener síndrome alcohólico fetal o una forma menos severa que se llama efectos alcohólicos fetales.

El síndrome alcohólico fetal causa:
- Discapacidades motoras
- Afectaciones de desarrollo
- Problemas de comportamiento
- Inteligencia baja
- Problemas del corazón
- Problemas de crecimiento
- Retraso de desarrollo

Centros para el Control de Enfermedades

Récords disponibles

Alcohólicos Anónimos de Arizona

Distribuye recursos de grupo y apoyo para las mujeres que tienen problemas con el abuso de alcohol.

Teléfono: 1-800-320-0738

Sitio web: http://www.aa.org

Centros para el Control de Enfermedades

Rocos e informaciones disponibles en la página web de su médico.

Teléfono: 1-800-320-0738
Abstract

Emily Rosenlieb
Nursing

A PREVENTABLE EPIDEMIC IN THE UNITED STATES: A STUDY OF THE DEMOGRAPHICS AND EDUCATIONAL PRACTICES ASSOCIATED WITH FETAL ALCOHOL SYNDROME (84 pp.)

Advisor: Dr. Connie Tezie

Fetal alcohol syndrome continues to affect individuals throughout the United States due to alcohol use during pregnancy. Although fetal alcohol syndrome is completely preventable, it is thought to be the leading cause of mental delay in the Western World (Walker, Fisher, Sherman, Wybrecht, & Kyndely, 2005). The National Organization on Fetal Alcohol Syndrome (NOFAS) has concluded that 1 in 100 pregnancies is negatively affected by alcohol consumption, almost the same rate as Autism (Fetal Alcohol Syndrome). Although this disorder is completely preventable, women continue to consume alcohol during pregnancy for a variety of reasons. It is possible that the number of women choosing to consume alcohol during pregnancy can be addressed with informative educational tools and support from community resources.

Many preventative educational programs and tools have been utilized in recent years throughout the United States. By analyzing these programs and tools that have been used in the past, community leaders can seek a resource that would be effective in their community. In Summit County, located in northern Ohio, various agencies were analyzed to better understand the characteristics associated with the different client populations.
The demographical information related to the client populations was then used to compile a population specific brochure in regards to fetal alcohol syndrome. The brochure will be utilized throughout Summit County in public health agencies. Fetal alcohol syndrome is one of the leading causes of preventable mental delay in America and it deserves public attention (Maier & West, 2001).