1-1-1990

Fetal Alcohol Syndrome

Mary Kaye Miller

FETAL ALCOHOL SYNDROME

by

Mary Kaye Miller

A RESEARCH PAPER

SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS IN EDUCATION

(SPECIAL EDUCATION)

AT CARDINAL STRITCH COLLEGE

Milwaukee, Wisconsin

1990

This research paper has been
approved by the Graduate Committee
of Cardinal Stritch College by:

Sister Joanne Marie Kinahan
(Advisor)

Date Feb. 27, 1990

Acknowledgments

I want to thank Penny Jacobs for her time and assistance in guiding my research. Thanks also goes to Mark Wolf, for proof reading and moral support. Finally, thank you Patty Dirksmeyer for the excellent typing. I greatly appreciate the help.

Table of Contents

CHAPTER 1

Introduction

Alcoholism has been a major problem in our society for many years. Despite repeated warnings and documentation of frightening effects, the public chooses to ignore the evidence and consumes alcohol at an ever increasing rate. The realities of central nervous system damage, traffic fatalities and breakdowns in family structure fail to overcome the public's glamourized view of alcohol consumption. Alcoholism is more prevalent than ever.

Alcoholism as a disease is a relatively new concept. It is no longer grouped with the antisocial behavior disorders. In DSM III, alcoholism is classified under the substance abuse disorders, and is not seen as a problem of impulse control, weak will, or moral lapse.

Yet the consequences of drinking alcohol have not changed. Even with increased awareness of the adverse effects of alcohol on the central nervous system and behavior, drinking continues to be an integral part of many lives.

More recently, attention has been directed at adult children of alcoholics. In general, these adults of alcoholic parenting systems exhibit problems with communication, trust, and interpersonal relationships. Fortunately, many of these adults are able to compensate for these difficulties and function well in society.

There is, however, another group of children of alcoholic parents that are not as fortunate. These children were introduced to alcohol consumption while still developing in the womb. They have been diagnosed as having Fetal Alcohol Syndrome (F.A.S.).

Purpose

Special Education teachers that have accepted the challenge of the F.A.S. student have little practical information designed specifically for effective programming for these unique individuals.

With the knowledge and understanding of alcoholic family systems, the ability to identify potential problem areas for F.A.S. children, and an index of techniques for facilitating the educational development of F.A.S. students, teachers will have the informational tools needed to assist in developing appropriate programs.

The research concluded in this study investigates, evaluates, and recommends sources of these informational tools for the Special Education teacher. By using this study as a guide, teachers will have a concise outline of practical and factual information for programming of the F.A.S. child.

Scope and Limitations

This research effort covered the educational aspects of Fetal Alcohol Syndrome, including the history of educating F.A.S. students and programs now in use in

Wisconsin. The students are junior high or high school level, and are diagnosed as F.A.S. or having F.A.S. effects. Indicators or F.A.S. symptoms and effects were also reviewed. As F.A.S. is a relatively recent concern, the information covered is of the past decade only.

Definitions

adrenal gland	One of a pair of ductless glands located above the kidneys
anatomic	Pertaining to anatomy
anomalies	An observable difference from the normal standard, especially as a result of congenital or hereditary effects
atria	Plural of atrium; the auricle of the heart
binge drinking	Irregular periods of heavy drinking
cerebrospinal fluid	Fluid surrounding the brain and in the spinal cord
cleft palate	Congenital fissures of palate and roof of the mouth
corneal opacity	Part of the cornea one cannot see through
cranial	Having to do with the skull or the brain

dysmorphology . . . . . The study of the normal range of physical development

epidemiological . . . . . Having to do with the science of study and control of epidemic diseases

first trimester . . . . . The first period of three or about three months of pregnancy

genticist . . . . . One who specializes in the recognition of abnormal development

Impervious womb Theory . . . Not permitting penetration or passage of alcohol or other harmful elements

languid . . . . . Drooping from weakness or fatigue

malocclusions . . . . . Such malposition of the teeth as will interfere with chewing

maxillary area . . . . . The upper jaw bone area

mental deficiency . . . . . Not of sound mind

micro-opthalmia . . . . . Having small eyes

microcephaly . . . . . Abnormal smallness of the head

morose . . . . . Gloomily or sullenly ill-humored

morphogenesis . . . . . The stimulation of growth

motility . . . . . Capabable of moving spontaneously

neonate . . . . . A newborn or an infant less than a month old

neurological abnormality . . Nervous system irregularity or disorder or disease

neurological deficiencies The nervous system being inadequate

neuron . . . . . A nerve cell with its processes

neurotic . . . . . Having an emotional disorder in which anxieties, phobias, obsessions, etc. dominate the personality

Noonan Syndrome . . . . . Occurs every ninth day

ocular . . . . . Pertaining to the eye

palpebral fissures . . . . . A cleft, a crack, or a groove pertaining to or situated near the eyelid

paternal . . . . . Related through a father, inherited from a father

philtrum . . . . . The area between the nose and upper lip

placenta . . . . . Supplies oxygen and nutrients to the fetus and removes the waste products of fetal metabolism

populace . . . . . The common people; population

post-natal . . . . . Subsequent to childbirth

second trimester . . . . . The second period of three or about three months of pregnancy

sobriety . . . . . The state or quality of not being drunk

teratogenic . . . . . Birth defect producing agents

third trimester . . . . . The third period of three or about three months of pregnancy

tortuosity . . . . . Twisting and branching

Summary

With alcoholism on the rise in the United States, the incidence of its disturbing effects are also increased. The F.A.S. child is one effect of particular concern to special educators, as they are confronted with these problematic students without preparation for the complexity of their difficulties. Due to the lack of readily accessible and organized information, a guide for teachers for education of F.A.S. students is needed.

The purpose of this research work is to provide such a guide for educators. Definitions of terms used in this guide are listed to facilitate the teacher in fully understanding the concepts. Although the guide is limited to programs for junior high or high school F.A.S. students used in the last ten years, the information should serve to increase knowledge of F.A.S. children and enable educators to program more effectively.

CHAPTER 2

Alcoholism

Twenty-one years ago, the American Medical Association identified alcoholism as a disease. Because it is a disease, it is not limited to certain people. Alcoholism is not restricted by social class, race, age, or sexual gender.

Drinking among American women has been rising since World War II. Estimates of the number of women alcoholics in the United States range between 1 million and 4.5 million (Keller & Gurioli, 1976). The highest proportion of heavy drinkers among women is between the ages of 22 and 30, the peak of reproductive years (National Institute for Alcohol Abuse and Alcoholism, 1975). The second highest period is the teenage years. Clearly, the risk of F.A.S. is high, for when a pregnant woman drinks, her unborn baby drinks, too.

Father's Role

Although few studies of the detrimental effects of paternal alcoholism differentiate between biological and environmental impacts, animal studies suggest alcoholism in the biological father may be detrimental to the fetus. The influence of alcohol on offspring of male alcohol abusers appears to be preconceptual.

In these studies of male alcoholics, it was found that sperm had irregular formation, impaired motility, and show the presence of damaged chromosomes (Lester, 1977).

It is the chromosomes, half from the male, half from the female, that determine the genetic make-up of the offspring. However, the specific manner in which alcohol causes these effects in the male sperm is unknown.

Children of alcoholic fathers are particularly susceptible to retarded intellectual functioning. These children score an average of ten points lower on the Wechsler Intelligence Scale for Children (WISC). Additionally, children of paternal alcoholics have been associated with social and psychiatric disturbances, delinquency, defiance of authority, and hyperactivity. These effects occur even when the female parent completely abstains from alcohol. The alterations present in offspring, both young as well as adult, of both sexes, indicates that paternal alcohol exposure may produce long term and probably permanent changes in offspring (Friedler, 1974).

Males also have a social role in their partners' decisions about drinking alcohol during pregnancy. Women who drink heavily are most likely to have a partner who also drinks heavily. Men are capable of supporting the habits associated with alcoholism, and are also capable of providing, instead, emotional support and encouragement, especially by their own actions, to their partners to improve the chances of having a healthy baby. His concerns can have a significant effect on the attitude of the woman. By abstaining from alcohol during his

partner's pregnancy, the male is supporting the female's decision to abstain also.

It is unknown exactly how many children's lives have been permanently afflicted by the disease of alcoholism. The use and abuse of alcohol during pregnancy is a public health problem approaching epidemic proportions. Alcohol consumption during pregnancy has the potential for very severe outcomes, such as miscarriage, mental retardation, and physical abnormalities. Alcohol consumption during pregnancy is also the only way to afflict a child with one of the most severe and permanent outcomes, Fetal Alcohol Syndrome. It is horrible to realize that such a tremendous affliction is completely and entirely preventable, and is a result of choices made by the parents to engage in drinking alcohol.

Diagnosis

Accurate diagnosis of F.A.S. or F.A.E. (Fetal Alcohol Effect) is important for many reasons:

(1) A child identified as having F.A.S. or F.A.E. must be further evaluated to establish individual needs, such as special medical attention and/or prevention therapy. This information is beneficial to parents and health care professionals involved with the child. Additionally, mental retardation or learning disabilities may be present and services for this must be provided.

(2) An accurate diagnosis of F.A.S. may eliminate other possible diagnoses and therefore answer questions for parents.

(3) An accurate diagnosis of F.A.S. and appropriate documentation will assist the epidemiological studies of F.A.S. and F.A.E. to further assess related problems.

The Fetal Alcohol study group of the Research Society on Alcoholism recommended a standard set of diagnostic criteria (Rosset, 1980). A diagnosis of F.A.S. should be considered only if a child has one or more of these signs in each category:

(1) Prenatal and/or postnatal growth retardation (weight, length, and/or head circumference abnormally small for age, or below the tenth percentile)

(2) Central nervous system dysfunction (signs of neurological abnormality, developmental delays, or intellectual impairment

(3) Characteristics of cranial and facial malformations with at least two of the following signs:

a) microcephaly

b) micro-opthalmia and/or short palpebral fissures

c) poorly developed philtrum, thin upper lip, or flattening of the maxillary area

(Chasnoff, 1988).

It is important that educators and parents know that a diagnosis of F.A.S. or F.A.E. should be made by a professional clinician, as they are the only persons capable of making an accurate diagnosis. Ideally, a diagnosis for F.A.S. would be made by a geneticist.

If the decision is made that F.A.S. has been accurately diagnosed, the information must be shared in a caring and nonjudgmental way. A professional counselor, educator or clinical psychologist may assist the diagnostician in delivering the difficult news and offer support to the parents. Additional considerations at this time include relationship of child to parents (biological or foster), future childbearing plans, treatment for drug and alcohol abuse, medical treatment, and education.

The emotional impact of a diagnosis of F.A.S. is great. Some parents have a sense of relief in having answers to their questions about their child. It may be as simple as knowing that alcohol caused the problems, and this awareness will prevent future use of alcohol during pregnancy. Some parents feel shame, sadness, fear, guilt, anger, resentment, or a need to blame. The child affected by F.A.S may become a burden on the family. This may affect the relationship of the child to the parents, biological or adoptive, in different ways. The knowledge that the problem could have been completely prevented often evokes anger from the adoptive parents as well as from the child. Again, a professional clinician or

educator may be valuable in assisting a family with these issues.

Clearly, the importance of accuracy in diagnosis is a primary concern. However, inaccurate diagnoses of F.A.S. or F.A.E. have been made by inadequately trained professionals (Uttney, 1986). Development of competency in medical, health, education, and social service professionals to recognize possible symptoms and to make appropriate referrals to diagnostic clinicians is essential in the assessment and treatment of F.A.S.

Historical Perspective

It was in 1973 that Fetal Alcohol Syndrome was identified. However, maternal alcohol consumption and its effects on offspring had been a concern for thousands of years. From biblical times through the nineteenth century, alcohol was widely believed to have detrimental effects on fetal development (Blume, 1981).

The Old Testament warning to Sampson's mother, "Behold, thou shalt conceive and bear a son, and now drink no wine nor strong drink, neither eat any unclean thing" (Judges 13:7), clearly stated a concern for the unborn child. Plato advocated abstinences for couples planning to have children: "It is quite hard to tell just what night or day the child will be conceived, children should not be made into bodies saturated with drunkeness" (Robe, 1982). Aristotle stated that, "Foolish drunken or hairbrained women, for the most part, bring forth children

like unto themselves, morose and languid." Aristotle was also concerned with paternal alcohol consumption (Zerrer, 1986). Ancient Carthaginian laws forbade bridal couples from drinking wine on their wedding night to insure against the conception of a defective child (Jones & Smith, 1973).

Wine and beer were popular beverages in the Middle Ages and played a prominent role in many traditional religious and social occasions. There was little concern or awareness of the potential effects of alcohol on the developing fetus during this time period.

The "Gin Epidemic" of England from 1720 to 1750, made clear the adverse affects of alcohol exposure to a developing fetus. The epidemic was a result of the restriction on distillation being lifted. Cheap gin became readily available throughout the country. A report on the epidemic sent to Parliament called for the control of the gin distilling trade and cited parental drinking as a cause of weak, feeble, and distempered children (Gold, 1984). Birthrate dropped and infant mortality rose during the epidemic years. Physicians attributed the changes to the use of alcohol.

Throughout the nineteenth century, numerous reports appeared in the United States as well as Britain describing the harmful effects of alcohol on offspring. Sir Francis Galton in 1899, one of Britain's most famous scientists, noted that children of alcoholic mothers were

healthy if they were born during periods of maternal sobriety, but were "neurotic" if they were born during periods of active maternal alcoholism. He reasoned that such children were born defective because the womens' tissues were drenched with alcohol, and alcohol diminished the quality of the mother's milk. Additionally, the bad home environment created by an alcoholic mother contributed to prejudice against the child's health.

In 1899, W. C. Sullivan, after Galton, made the first scientific study of the teratogenic effects of alcohol. Sullivan concluded that the increase in the infant mortality rate, among later births, reflected the increase in chronicity of alcoholism in mothers. Additionally, Sullivan found several alcoholic women who had alcohol-affected children previously were able to give birth to normal children when forced, by imprisonment, to give up alcohol.

In 1909, Dr. Taav Laitenen, of Finland, observed that maternal drinking during pregnancy was connected to low birthweight babies. The babies born to drinking mothers were the smallest. Also, Dr. Laitenen noted that weight differences in these babies were still evident at eight months of age. The children of "drinkers" developed the most slowly.

During the Prohibition of alcohol in the United States, medical concern about the use of alcohol during pregnancy diminished. The theory of the "impervious womb"

was widely accepted, and its claim that the womb was like a brick wall surrounding and protecting the fetus from harm was understood to be factual. This theory was prevalent during the time of the repeal of the prohibition, when a wave of renewed interest in consuming alcohol swept the nation. Drinking alcohol was believed to be totally safe for all people, including expectant mothers who could depend upon the "impervious womb" to protect their babies.

By 1940, however, the public was again concerned about potential detrimental effects of alcohol consumption. A report was published supporting the "impervious womb" theory, stating that alcohol had detrimental effects on adult reproductive tissues, but the fetus remained protected from damage within the womb (Haggard, 1942). Developmental problems observed in children of alcoholic mothers were attributed to post-natal factors, such as inadequate nutrition or disturbed home conditions, not to prenatal exposure to alcohol.

In 1968, France produced a systematic description of birth defects in offspring of alcoholic women. In 1972 the United States also published a systematic description of birth defects of children of alcoholic women in scientific literature (Blume, 1981). Finally, in 1973, Dr. Kenneth Jones, Dr. David Smith and their co-workers published an independent study of children born to chronic

alcoholic mothers. Their findings were identified and labeled Fetal Alcohol Syndrome (Jones, 1973).

More than a thousand studies on the effects of alcohol consumption during pregnancy followed. Hanson, Jones and Smith published a study of children born to heavily drinking women and reported "prenatal and postnatal growth deficiencies" in these children (Hanson, 1976). The information provided by these studies has led to a more complete and comprehensive understanding of alcohol and its effects on fetal development.

Pregnancy

Alcohol is a drug, and like many drugs alcohol can disrupt the normal development of the unborn child. There may be a two to three day critical period as early as a few weeks after conception when the developing fetus is especially vulnerable to damage (Science News, 1981).

In pregnant women, alcohol is carried to all organs and tissues in their bodies. The placenta provides no barrier to the passage of alcohol, which diffuses readily through the membrane into the fetal blood circulation. In this way, alcohol is carried to all the developing organs and tissues of the fetus. When a pregnant woman drinks alcohol, the concentration level is the same for the fetus as it is for the mother. Additionally, alcohol reduces the flow of blood through the placenta, and decreases the amount of oxygen to the fetus. Alcohol inhibits and disrupts normal patterns of cell growth and development,

and interferes with the active transportation of amino acids, reducing fetal nutrition.

At any time during pregnancy, alcohol is potentially dangerous to the fetus. Growth retardation can be determined as early as 16 weeks (Luke, 1979). The timing and duration of exposure to alcohol is related to the type of damage that may occur. Early exposure presents the greatest risk for serious physical structural defects. Later exposure increases the chances of neurological deficiencies, growth delays, or fetal loss.

In the first trimester, alcohol is most likely to affect the physical features of the unborn baby. The way cells arrange themselves as they multiply and produce tissue growth is altered by alcohol intake.

The developing brain cells are particularly sensitive to alcohol. The brain is smaller because of the diminished number of cells in the growing fetus. Often, neurons are found in the wrong places. It is clear to see why alcohol consumption by pregnant women is "the third most common cause of mental retardation in newborns" (Niven, 1986). Early loss of cells can contribute to retarded growth and low birthrate in babies born to drinking mothers.

The second trimester is where miscarriage is a major risk. This may be related to fetal distress from maternal "binge drinking". These irregular periods of heavy drinking also incur a risk of premature separation of the

placenta in the second trimester. The developing eyes, ears, teeth, and external genitalia are still sensitive to damage from alcohol during this time, as is the central nervous system.

In the third trimester, the fetus has, for the most part, developed its structures. However, this is the period of rapid and substantial growth for a normal fetus. High concentrations of alcohol in the blood at this time will impair physical growth, impair the central nervous system growth, and interfere with future intellectual and behavioral development.

There remains much to be learned about the problems of alcohol consumption during pregnancy, including the risk factor of smaller amounts of alcohol, times during development when the fetus is most susceptible to alcohol, and the degree to which risk is compounded by other factors, such as nicotine use and poor nutrition. The sooner an expectant mother stops drinking, the better the chances are that the baby will be born strong and healthy.

No safe level of alcohol consumption has been established, but as consumption decreases so do the risks. The only guarantee of having a child without F.A.S. or F.A.E. is to not drink any alcohol at all. Without alcohol drinking, there can be no F.A.S. or F.A.E.

Case Studies

Most recent findings show that alcohol-related neurological and behavioral effects have been continuous

in children of heavier-drinking mothers to at least 4 years of age (Streissguth, 1984). Tests continue to show reduced attention and slower information processing even in 4-year-old children prenatally exposed to lower levels of alcohol. There has been a gradual decrease in aptitude in tests that require vigilance and fast reaction of children who were born to heavy drinkers.

Children who had been studied and followed up on 10 years later were reexamined. Streissguth and her colleagues (1983) indicated that these children now in their teens, range from border-line retarded to low-normal range of intelligence (IQ 70 to 86). They were attending regular classes supplemented with remedial education. The other children had IQs ranging from 20 to 57, are severely retarded and had to be in special classes. An earlier follow-up study on these children when younger noted that the degree of intellectual impairment was correlated with the severity of malformation and growth deficiency (Streissguth, 1978). Streissguth and her colleagues (1983) found that the physical characteristics were similar, although facial appearances were altered somewhat by increased growth of the chin and nose. Characteristic facial features had persisted. The children were below average in height and head circumference. There had been improved weight gain with age. The adolescent girls have a short, stocky stature and the adolescent boys tend to be short and lean (Streissguth, 1978).

Numerous physical problems were evident in later studies. These include chronic middle ear infections with sustained hearing loss, severe dental malocclusions, and vision problems. Some cardiac defects were found, but were not major medical problems (Unbeit, 1980).

Biological factors associated with the terminal stages of alcoholism may have contributed to the severe handicaps of children. Investigators also suggest that the quality of later home environment does not improve on the damage caused by prenatal alcohol exposure. However, a stable home environment did improvements in social and emotional development (Chasnoff, 1988).

Characteristics of F.A.S.

Over the past 10 years it has been evident that children affected by prenatal alcohol exposure show great individual variations in the extent and severity of malformations and impairments. Infants born with F.A.S. exhibit an altered pattern of growth and morphogenesis that include prenatal and postnatal growth deficiencies (Stephens, 1981).

In some cases the diagnosis of F.A.S. can be made in the neonate. In others, one or two years will pass before postnatal growth retardation and developmental or intellectual delays are recognized. The characteristic facial dysmorphology is more easily discerned after the newborn period. In severe cases, dysmorphic features in

the newborn are sufficiently distinct to be identified, but diagnosis is impeded when cases are mild.

As shown in Table 1, the abnormalities that may be present in an F.A.S. child go beyond facial features (See Table 1). These abnormalities may include growth retardation, limb malformations, internal organ irregularities, as well as functional abnormalities.

Table 1

TABLE OF ABNORMALITIES

CLINICAL FEATURES OF F.A.S.

GROWTH ABNORMALITIES

1. Premature birth
2. Prenatal growth retardation
3. Postnatal growth retardation
    a. short stature
    b. diminished weight

SKULL & FACIAL DEFORMITIES

1. Small head compared to rest of body (associated with mental retardation)
2. Eye abnormalities
    a. oriental-looking eyes
    b. shortened horizontal eye length
    c. corneal opacity
    d. drooping eyelids
    e. pronounced nearsightedness
    f. squinting

g. twisted blood vessels in the retina

h. eyes appear widespaced but are not

3. Flattened nasal bridge

4. Abnormally formed ears

5. Defective development of tissue in the jaw

6. Thin upper lip

7. Small lower jaw

8. Cleft palate

JOINT & LIMB MALFORMATIONS

1. Limitation of elbow extension

2. Toe & finger irregularities

a. small nails

b. permanently bent fingers

3. Dislocated hips

4. Abnormal creases in the palm of the hand

CARDIAC ABNORMALITIES

1. Defects in the wall between the atria

2. Defects in the lower chambers of the heart

3. Narrowing of the pulmonary artery, enlargement of the right ventricle, misplaced aorta, defects in the wall between the ventricles

4. Persistence of an opening between the main pulmonary artery and the aorta

5. Interruption of the curved part of the aorta

6. Narrowing of the opening into the pulmonary artery from the right cardiac ventricle

KIDNEY IRREGULARITIES

1. Single kidney
2. Collection of urine in the kidney pelvis due to obstructed outflow
3. Defective development of kidneys

FUNCTIONAL ABNORMALITIES

1. Neonatal
    a. poor sucking ability
    b. loss of muscle tone
    c. trembling or shaking
2. Postnatal
    a. delayed development
    b. mental retardation
    c. poor gross motor coordination
    d. poor fine motor coordination
    e. learning disabilities
    f. hyperactivity
    g. decreased attention span

OTHER FINDINGS

1. Accumulation of cerebrospinal fluid within brain ventricles
2. Neural tube defects in the fetus
3. Single umbilical artery
4. Noonan syndrome
5. Klippel-Feil Syndrome (short & wide neck, low hairline, reduction in number of cervical vertebrae, fusion of cervical spine, etc.)

6. Accessory nipples
7. Abnormal external genitalia
8. Benign tumors of the capillaries
9. Spastic stiffness of the limbs
10. Cancer of the adrenal gland

(Quellette, 1982)

Fetal Alcohol Syndrome is characterized by varying degrees of mental retardation, behavioral problems (including hyperactivity, poor attention span, extreme nervousness spans and irritability), growth retardation, and abnormalities in facial, anatomic, and physiological features. These differences are found in almost half of the infants born of alcoholic women. Babies with this syndrome were short and lighter in weight than normal and didn't "catch up" after special postnatal care was provided (Department of Health and Human Services, 1982).

Growth Retardation

The most common sign of fetal alcohol syndrome is retarded growth in weight, length and head circumference, both before birth and after (Rosett and Weiner, 1984). F.A.S. children are also smaller than premature non-F.A.S. children of the same age. Children born with F.A.S. continue to show retarded growth even if they have adequate nourishment and are placed in a stable environment. During the preschool years many children are characterized by spindly limbs and short stature besides having a disproportionately small head.

Alcohol inhibits the effective combination of protein and amino acids, and inhibits their production. There is a decrease in the amount of protein available, limiting the growth and development. Only smaller cells or fewer normal cells are produced. When the fetus is exposed to alcohol, growth retardation is caused by a lack of cells, not by cells limited in size. This reduced cell quantity may explain why children with F.A.S. show little gains toward normal growth standards or improvement intellectually.

In some cases, length has been observed to be more profoundly affected than weight, while others have observed that length and weight are equally diminished (Lemoine, 1968).

Low birthweight of infants born to alcoholic mothers is also an area of concern. In almost all studies of birthweight, reduced weight at birth is related to the amount of alcohol consumed, and to the duration and time of exposure to alcohol. As the dosage of alcohol increases, the severity of low birthweight increases. If drinking continues into the third trimester, the alcohol's effect on the growth of the fetus is more likely to occur. The effects of growth retardation may not be as severe when a reduction in the alcohol consumption later in pregnancy occurs. Women who are able to reduce or abstain from drinking during the third trimester gave birth to infants with less growth retardation than women

who did not attempt to eliminate any alcohol consumption during the third trimester (Rosett, 1980).

Children with F.A.S. also have smaller than normal head circumferences. As the children grow older, the retardation of head circumference growth is more pronounced. The small head size is the greatest concern of all of the growth retardations. Reduced head size usually indicates a smaller size brain and its development as well. This is associated with mental retardation or developmental disabilities.

Facial Anomalies

Children with F.A.S. have facial malformations most often seen in the eyes, nose, upper lip, and midface (Clarren, 1981, 1982). It also may affect the forehead, chin, and ears.

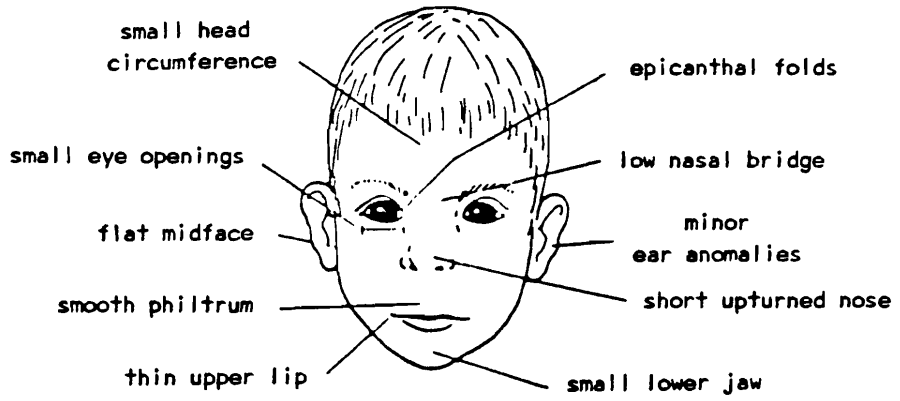
Some facial features that have been identified which occur most frequently are quite typical in children with F.A.S. It is important to remember that the combination of these facial characteristics is taken into account when diagnosed. Many of the eye abnormalities and other facial characteristics that are identified in these children also occur in others who are so called normal and may be a common trait to a particular race or family. Also, these features could be the result of a genetic disorder or fetal exposure to something other than alcohol.

Only external differences have been recognized up to this point. Researchers are now beginning to discover

internal damage to the eyes. There is an increase in tortuosity of the blood vessels in the retina at the back of the eye, and diminished or underdeveloped optic nerves have been observed. Children with F.A.S are more likely than other children to be diagnosed as having severe nearsightedness. More investigation into ocular problems may help to further assess types of damage that occurs to the brain.

Externally, one may see that the eyes are small (microopthalmia), sometimes crossed (strabismus), and nearsighted (myopia), and the eye openings (palpebral fissures) are narrow. The eyelids droop (ptosis), and epicanthal skin folds (diagonal folds of skin across the inner corners of the eyes, which are normal in many races but often a congenital anomaly in Caucasians) are sometimes present. The nose is typically short and upturned, and the nasal bridge is often reduced, giving the nose a flattened appearance at the top. The upper lip is thin and straight across the top (i.e. no "Cupid's bow"), and the abnormally wide area between the nose and the upper lip lacks a fully developed groove (philtrum). (U.S. Department of Health and Human Services, 1982). Figure 1 is a diagram of common F.A.S. facial features.

Figure 1. Facial Characteristics of a child with F.A.S.



(Little & Streissguth, 1982)

Both the upper and lower lip are thinner than normal. Other facial abnormalities include a small lower jaw, which looks like a receding chin. Some children have future dental problems and irregular teeth. The ears may appear to be big due to the fact of the head being of small size and slightly irregular in shape. The ears are located lower on the head and rotated slightly towards the back. This may be the result of the overall skull growth. Some less common features are having excessive hair around or on the face and unusual spiral pattern of hair growth. This may be associated with the underdeveloped growth of the brain and head.

Central Nervous System Anomalities

Injury to the central nervous system is another major characteristic of children with F.A.S. This is seen by children having mental retardation, poor attention span,

delayed motor development, sleep disturbances, irritability, language dysfunction, hyperactivity, feeding problems, perceptual problems, and delayed motor development (Rosett, 1984). These problems were more pronounced with children who had severe facial deformities (Streissguth, 1978). Also, these symptoms have been observed even in the absence of facial deformities or growth retardation. Children having F.A.S., with severe facial deformities, show less improvement in functioning over time than children with milder cases. These children are able to make more gains with the help of specialized training programs and/or therapy in their central nervous system functioning.

There are relatively few forms of mental deficiency that can be diagnosed prior to birth, and the mental deficiency associated with Fetal Alcohol Syndorme is one of them.

Legislation

It is well known that pregnancy is a difficult time for a woman. Many pregnant women are confused, scared, and intimidated. This is not due to the pregnancy alone, but it includes the past histories of the families involved and the pressures that feed the variety of addictions women may encounter. Most mothers are willing to make incredible sacrifices for their unborn children, and the federal and state legislation departments can provide help. Through law and enforcement, mothers can be

provided protection and treatment to assist in their time of need.

In 1981, the Surgeon General advised women who are pregnant or who are considering pregnancy not to drink alcoholic beverages, and to be aware of the alcohol content of food and drugs. It is a requirement that ingredients of a product be stated on the label, and that proper warnings be clearly provided.

The issue of adequate product warnings is now hitting the liquor industry (Davis, 1988). Lawsuits recently filed in Pennsylvania and Washington against several distilleries and breweries had claimed that these manufacturers are liable for money damages because they failed to provide warning labels with their products (NCA, 1987). Any company that ignores the issue of adequate warning today is subjecting itself to potential product liability (Davis, 1988). Manufacturers of products that can harm consumers have a clear duty to provide adequate warnings as to the nature and extent of the risks involved, especially when the dangers are not readily apparent to consumers.

Since December 1983, at least five cities: New York, N.Y.; Philadelphia, PA; Washington, D.C.; Columbus, OH; and Clearwater, FL have passed ordinances requiring all vendors of alcohol to post conspicuous signs notifying consumers of the link between drinking during pregnancy and the incidence of birth defects (Schechter, 1986).

Other efforts are on their way in the state of Maine and the cities of Los Angeles, CA; and Monroe, LA. The message is generally: "Warning: Drinking alcoholic beverages during pregnancy can cause birth defects" (Alcohol Health, 1986).

At the state level in Wisconsin, a law requiring warning labels on all containers holding alcoholic beverages went into effect in November, 1989.

In 1985, in Wisconsin, the Legislature passed a bill requiring clerks in each county in the state to distribute pamphlets about fetal alcohol syndrome to couples applying for marriage licenses.

More recently in Wisconsin, a bill was introduced requiring medical professionals, paramedics and drug abuse counselors to report suspected cases of drug addiction in infants. People blocking these reports could be fined $100 or jailed for 60 days. This bill also is applied to children with Fetal Alcohol Syndrome (Gunn, 1989).

On July 1, 1985, the Virginia Congenital Anomalies Reporting and Educating System (Virginia CARES) came into being and Virginia became one of the twelve states in the nation to have instituted legislatively mandated systems to monitor the incidence of congenital malformations. This program helps to insure that all affected infants and their families have access to already available services (Virginia CARES, 1985).

On the other hand, does our society want to jail women for having drug problems when they are pregnant? In Florida, Long Island, Illinois and Texas women have been charged with using drugs during pregnancy and were charged with prenatal child abuse and neglect (Chavkin, 1989). Will the policing of pregnant women and jailing errant mothers solve the problem? The Supreme Court in 1925 declared drug addiction to be a medical problem, not a criminal matter. Most pregnant women including drug addicted ones, want the very best for their child's future. One would think that becoming pregnant indeed would be a time for motivating mothers to become clean from drugs. Do these mothers need treatment or punishment? Should a sickness become a crime? This is another very controversial topic.

There needs to be ongoing legislative and judicial debates about pregnant women who abuse alcohol and controlled substances. Once guides are established, prevention and interventions can follow.

Statistics in Wisconsin

Each year in Wisconsin:

- About 100 babies are born with F.A.S. (reported and diagnosed).
- About 200 babies are born with mental retardation due to alcohol exposure.
- About 250 babies have significant growth retardation due to alcohol exposure.

- About 600 babies are lost through miscarriage due to alcohol exposure.
- The cost burden to Wisconsin from alcohol use during pregnancy has been estimated to be 45 million dollars per year.

(Wisconsin Association on Alcoholism and Other Drug Abuse, 1979).

Statistics Nation-wide

- F.A.S. in America is estimated to be approximately 1 F.A.S. baby born in each 750 live births.
- F.A.S. among American Indians is higher, 1 in every 633 babies, with some tribes as high as 1 in 100.
- There are 3,600 to 6,000 babies born with F.A.S. each year.
- There are 36,000 newborns each year that may be affected by a range of less severe alcohol-related fetal alcohol effects.
- Among alcohol-abusing mothers, F.A.S. occurs in as many as 29 per 1,000 births.

(National Council on Alcoholism, Inc., 1987).

Education

Parents may not realize that their child is a victim of fetal alcohol exposure. Though the F.A.S. child is born small and may stay small for his/her age for many years, other characteristics may appear in a lesser degree or not at all.

As these children grow up, however, they are more clearly different from other children. Their heads and brains are smaller, and they are often retarded. Frequently, F.A.S. children are poorly coordinated, have difficulty learning, and have trouble controlling their behavior and containing their emotions.

The alcohol-affected child scores significantly lower in a number of tests of development, including hearing and speech, eye-hand coordination, and practical reasoning. These difficulties are quite evident in the tasks that demand good eye-hand coordination, visual form perception, concept formation and attention span.

The severity of F.A.S. is directly related to IQ level. A considerable difference in intellectual functioning was reported. IQ scores ranged from 16 to 105 (mean 65, standard deviation 2) with the lower scores from the most severe cases of F.A.S. Scores below 65 and above 105 remained stable for three to four years after the initial testing. However, F.A.S. children with middle range scores improved significantly (Streissguth, 1978).

The majority of children who were have been associated with pre-natal alcohol exposure were found to have severe disturbed visual perception, growth deficiency and impaired motor performance and possible malformations (Kyllerman, 1985).

Researchers have observed that learning disabilities decreased in children having less neurological symptoms

(e.g., hyperactivity and hyperexcitability). Some improvement may be from implementing certain interventions over a long period of time. Aronson and Olegard in 1979, reported that parents of alcohol-exposed children perceived their child to be more normal at ages three to four than earlier. Test results confirmed that children at these ages could catch up, but at ages five and six the disabilities amongst these children were more pronounced.

Numerous behavioral characteristics are typical in F.A.S. or F.A.E. afflicted children. These are important to differentiate them from other children being diagnosed as having mental retardation.

Social adaptations are quite difficult for F.A.S. and F.A.E. children. These children tend to be very outgoing and socially engaged, yet are perceived by others as intrusive, overly talkative, and unaware of social cues. Poor social judgment and socialization skills are common, many children are striving for attention, both in positive and negative ways. Due to social immaturity, these children may have difficulties establishing relationships, especially with children their own age. Both social isolation and exploitation are evident with children having F.A.S. (LaDue, 1987).

Hyperactivity is identified as one of the dominant behavioral characteristics of F.A.S. children in their early years. Hyperactivity may lessen somewhat with age. (LaDue, 1987.) This can be a serious obstacle in learning

and performance in school. When combined with having attention deficits, perceptual problems, language delays and memory problems, hyperactivity may tend to set back a child's functioning even further.

Many children with F.A.S. have cognitive limitations and behavioral problems which require appropriate identification and intervention for their specific delays. This gives the child a chance of maximizing development. Many need to be recommended for Special Services by the third grade (Gold, 1984). Other interventions can be implemented sooner. Severely affected F.A.S. infants could benefit from early mental and motor stimulation. Early stimulation may help offset some developmental delays.

Developmental delays and delays in acquisition of language skills are often noted among preschoolers with F.A.S. Early identification of F.A.S. and F.A.E., along with appropriate testing, can facilitate individualized educational planning. Appropriate placement in Special Education classes beginning in elementary school is often necessary.

Although intensive remedial education has not been shown to increase the intellectual capabilities of F.A.S. children, it may prevent further deterioration. A small classroom with simple and clear guidelines with a great deal of individual attention to students will maximize their abilities. Periodical testing is recommended to

help teachers tailor educational services to the individual child's needs.

Many children with F.A.S. reach an academic plateau in high school. Many will be unable to hold a regular job. These children need to know basic life skills: money management, safety skills, interpersonal relating, and so forth. Life skills in special education is strongly recommended.

Children with F.A.S. would benefit immensely from vocational training in high school. The high school years should teach children the life skills and vocational training they will use in adulthood.

Teachers at all levels should have training and information about F.A.S. in order to help them recognize and understand the problems facing these children. Being familiar with F.A.S. can help teachers set realistic performance expectations and adapt or modify teaching methods to the special needs of these children.

Prevention

Humans need to be fully developed in order to be happy and balanced. A unified approach, which includes community and government programs for social, economic, cultural, medical, and educational needs, must be used to eliminate both cause and effect of alcohol and other drug abuse (Ottney, 1986).

The first step is identifying the alcohol/drug abusers. Medical practitioners, especially Obstetric/

Gynecologic physicians, are becoming increasingly aware of the importance of the risk factor of alcohol abuse during pregnancy (Sokol, 1980). Few are experts, and often they are not comfortable addressing the problems of alcoholism. The following interventions are recommended:

1. Suggest limited drinking
2. Refer patient to a specific alcohol treatment program and, if necessary, maintain contact with the patient for documentation (U.S. Department of Health and Human Services, 1981)

Supportive counseling, directed at attaining and sustaining abstinence from alcohol consumption, should be initiated as soon as heavy drinking has been identified. Local affiliations of The National Council of Alcoholism can offer assistance, as well as the Alcoholics Anonymous Chapter and Women For Sobriety Groups. Additional information on support groups is obtainable from community Mental Health agencies. Most of these sources of support are listed in the telephone directory.

For evaluation, community health nurses are a valuable resource. In families with alcohol related problems, the visiting nurse has opportunities to make observations. Discarded bottles and drinking alcohol in early morning hours are indicative of potential abuse. Such behaviors, observed over time and within the context of the family environment, will develop the evaluation, as well as identify the conditions contributing to the

problem. The rapport established with the family may allow the community nurse to be more accessible to the client than other health professionals (Stephens, 1981). Identifying an alcohol problem may take a long time. Health professionals need to maintain nonjudgmental attitudes of concern, and be optimistic in working with the client.

Many children with F.A.S. are not being identified early. The staff of early intervention programs, neonatal nurseries, pediatric units, and health centers, pediatricians and family practitioners should be familiar with common symptoms of F.A.S. and F.A.E. Awareness of congenital malformations, developmental delays, hyperactivity, poor feeding patterns and failure to thrive as signs of F.A.S. or F.A.E. is necessary (Minor, 1982).

The fetal alcohol syndrome child brings to its parents a totally new set of crises and reactions not usually associated with the birth of a healthy child. Parents may want to participate in family counseling. Acceptance of the reality of the situation can only come with the education of the parents about their child's developmental problems and knowing the short-term and long-term prognoses (Opirhory, 1979).

Community resources are not always easy to identify for patients with F.A.S. and their families. Due to the diversity and number of difficulties, F.A.S. patients require more specialized services than are generally

available. A caseworker or social service professional may advocate for, or gain access to, services from all sectors, and monitor their delivery (MacDonald, 1986).

Planning for patients may include exploration of available community resources and support groups, state developmental disability funds, support for subsidized adoptions, advocacy groups for retarded citizens, and workshops and work training programs for developmentally disabled adults. There may be state support which would include services such as medical assistance, infant stimulation programs and respite care. The strong advocacy on the part of the caseworkers, or others involved, can help families negotiate such barriers and identify alternate resources (Giunta, 1988).

Often children with F.A.S. are not identified as such until they reach kindergarten or first grade. Elementary and Special Education teachers need training to alert them to problems children are having, particularly if congenital abnormalities are present. Learning difficulties, in these circumstances, may be the result of F.A.S or F.A.E. or may be related to home environment problems such as alcoholism.

Schools are an ideal place to perform the following services for children of alcoholics: information sessions on alcoholism and alcohol abuse, referral to community agencies for special services, peer groups for discussions of adolescent issues, introduction to Al-a-Teen, and

supportive alcohol education programs (U.S. Department of Health and Human Services, 1986).

Wisconsin was among the first states to take initiative in preventing Fetal Alcohol Effects. An F.A.S. Task Force was created and conducted public awareness campaigns in 1979 and 1980. Packets of materials were distributed to health professionals. Included in the campaigns were public service announcements to health agencies and media services. The governor signed a proclamation for "F.A.S. Awareness Month" in 1980. then, in 1986, a similar proclamation for "F.A.S. Awareness Week" was signed as part of a second state-wide awareness campaign (Ottney, 1986).

In 1983, an interdisciplinary group of people, dedicated to the prevention of F.A.S. and F.A.E. was organized into the Fetal Alcohol Syndrome Workgroup. Members of the group came from both public and private agencies representing the fields of alcohol and other drug abuse, developmental disabilities, genetics, medicine, and education.

The F.A.S Workgroup has engaged in a number of public and professional projects. Lessons for High School teachers were developed to introduce F.A.S. to Biology, Health and Child Development classes. Additionally, a pair of audio tapes was made about F.A.S. that is available to the general public. The F.A.S. Workgroup created a workshop for training health and social service

professionals. Materials and information on F.A.S. and F.A.E. are collected, reviewed, updated, and distributed regularly (Wisconsin Fetal Alcohol Syndrome Workgroup, 1986).

Other agencies in the state are also taking active roles in the prevention of F.A.S. The nationally marketed film, "One for My Baby", is originally from UW-Madison's public television station WHA-TV. The film is a key educational tool in many presentations about F.A.S. and alcohol. F.A.S. and F.A.E. are the target areas for the Youth Association for Retarded Citizens. Their efforts include peer education activities, speeches to legislators, and community awareness activities. The TRAILS project for the American Indian Youth populace have also included F.A.S. as a part of the Alcohol Education Program. Education and awareness of F.A.S. is also promoted by NEWCAP, the Racine Council on alcohol and other drug abuse, the Oconto County Unified Health Services, and the Ozaukee Council, Inc. The number of institutions and service providers involved in F.A.S. prevention continues to grow annually, as more and more hospitals, schools and counseling agencies join in the endeavor (Wisconsin Clearinghouse, 1986).

CHAPTER 3

Summary and Conclusions

The goal of this research project was to provide a comprehensive report on Fetal Alcohol Syndrome as it relates to Educators. Special attention was given to resources for developing curriculum and the teacher's role. Additionally, an outline of related issues, including a history of the syndrome, F.A.S. characteristics, legislation, teen pregnancy, and alcohol and other drug abuse was presented.

Educators must remember that F.A.S. cannot be dealt with in isolation. A constellation of concerns may need to be addressed by the teacher, school nurse, or family physician. These concerns may include long term issues, such as marital discord, alcoholism, developmental delays, and learning disabilities. With a basic understanding and knowledge of these related issues, a teacher would be more readily equipped to intervene on behalf of an F.A.S. child.

The facts reported in this research clearly show a correlational potential for an increase in the incidence of Fetal Alcohol Syndrome. Despite legislation and education, teenage pregnancies and alcoholism are on the rise. The apathetic attitude of expectant parents about alcohol use continues to result in the permanent damage of children. It may be due in part to fathers not taking a responsible role in the pregnancy in terms of their alcohol use. It may be due in part to the belief of

expectant parents that, "it won't happen to us." Perhaps misinformation about alcohol use during pregnancy was given by a nurse or family practitioner. Perhaps parents just did not know about the teratogenic effects of alcohol, or they assumed only a small amount of alcohol at certain times was "safe". Perhaps parents did have all the information and chose to "chance it" anyway.

If it is the case that people are informed and not acting responsibly, the question arises: "What should be done?" What are the moral and legal obligations of pregnant women? Should pregnant women be allowed the right to choose to consume alcohol in light of carefully documented effects of drinking alcohol on the developing fetus? What can the law do to prevent F.A.S.? What are the responsibilities of the producers and distributors of alcoholic beverages? These are complex questions with no easy answers.

One absolute fact remains. Fetal Alcohol Syndrome is one hundred percent preventable. Not one single fetus needs to be traumatized by alcohol. Consuming alcohol is a choice, an unnecessary choice, made by pregnant women every day. If there were no drinking of alcohol during pregnancy, there would be no F.A.S. at all.

In a world filled with temptations of every kind, temptations that can mutilate and destroy, difficult choices must be made. Education and legislation can only do so much to influence the choices made by the public.

Ultimately, the responsibility for the choice to drink or not drink during pregnancy lies with the individual. However, it can be an informed choice.

As the knowledge base of alcohol effects on fetus development grows, so must the sharing of the new information. Schools and educators must take a leadership role in prevention and intervention programs. In the school, teachers have opportunities to promote, inform, and influence choices and decision-making. It is crucial that students are taught to make informed choices and to think through potential consequences of their choices. This is especially important with issues of sexuality, pregnancy, parenting, and alcohol and other drug use.

In being leaders, teachers can become involved in the prevention of F.A.S. on many levels. Letters to senators and congressional representatives provide insight to public concerns. Communities are in need of leaders to form groups on teenage pregnancy, alcoholism and parenting. In becoming involved, teachers are setting an example for the community. Creating programs when they don't exist and expanding the sharing of information is vital to the cause.

Increased interest in the subjects of alcohol, pregnancy, and F.A.S. will generate more research, more information, and more awareness. Educators can develop programs and lesson plans that effectively assist the

growth and learning of F.A.S. students by utilizing information collected in research projects.

Finally, teachers and educators must examine their own values, beliefs and behaviors. Consider the following scenario: While having dinner at a local restaurant, you notice a pregnant woman at the next table. The woman is drinking alcohol. What would you do? You could do nothing. You could mention your concerns to the hostess or manager. You could speak directly to the woman about the dangers of drinking alcohol while pregnant. What would you do?

National Agencies

Illinois Prevention Resource Center
901 South Second Street
Springfield, IL 62704
(217) 525-3456

March of Dimes
1275 Mamaroneck Avenue
White Plains, NY 10605
(or your local chapter)
Madison: (608) 257-5151

National Center for Education in Maternal and Child Health
3520 Prospect St., NW, Ground Floor
Washington, DC 20057

National Clearinghouse for Alcohol Information
P.O. Box 2345
Rockville, MD 20825
(301) 468-2600

National Council on Alcoholism
12 West 21st Street
New York, NY 10010
(212) 935-7075

National Indian Fetal Alcohol Syndrome Prevention Program
2401 - 12th Street
Albuquerque, NM 87102

Healthy Mothers, Healthy Babies Coalition
600 Maryland Ave., SW, Suite 300 East
Washington, DC 20024
(202) 638-5577

Other Organizations in Community

- State and local maternal and child health and developmental disabilities agencies
- Local or state medical societies or chapters of national organizations
- Alcohol and other drug abuse agencies
- State midwives and nurses associations
- Women, Infants, and Children (WIC) nutrition counselors
- Women's advocacy groups
- Civic organizations
- Hospitals
- Appropriate business firms
- Local chapters of the Association of Junior Leagues

Wisconsin Resource Agencies for information and materials

Central Wisconsin Center for the Developmentally Disabled
317 Knutson Drive
Madison, WI 53704
(608) 249-2151

Wisconsin Association for Retarded Citizens
5522 University Avenue
Madison, WI 53705
(608) 231-3335

Middleton Health Sciences Library
1305 Linden Drive
University of Wisconsin - Madison
Madison, WI 53706
(608) 262-2371

Barb Biesecker, Genetic Counselor
329 Waisman Center
University of Wisconsin - Madison
Madison, WI 53706
(608) 263-1991

Judy Pfeifer, Executive Director
PICADA
17 North Webster Street
Madison, WI 53703
(608) 251-4558
(608) 255-0819

Jim Ottney
Wisconsin Human Genetics Education Center
104 Genetics Bldg
445 Henry Mall
University of Wisconsin - Madison
Madison, WI 53706
(608) 262-9784

Wisconsin Association on AODA/Women Reaching Women
2801 West Beltline Highway, Suite 235
Madison, WI 53713
(608) 273-8616

Wisconsin Clearinghouse
P.O. Box 1468
Madison, WI 53701
(608) 263-2797

Wisconsin Human Genetics Education Center
104 Genetics Building
445 Henry Mall
University of Wisconsin
Madison, WI 53706
(608) 262-1006

Wisconsin Office on Alcohol and Other Drug Abuse
Room 441
One West Wilson Street
Madison, WI 53704
(608) 266-2717

Brochures, Pamphlets and Fact Sheets

NCADI
P.O. Box 2345
Rockville, MD 20852
(301) 468-2600

Program Strategies for Preventing Fetal Alcohol Syndrome and Alcohol-Related Birth Defects
Request PH236

Alcohol and Birth Defects: The Fetal Alcohol Syndrome and Related Disorders
Request PH238

My Baby . . . Strong and Healthy
Request PH225

Taking Care of Your Baby Before Birth, A Message for Pregnant Women
Request PH239

* * * * * * * * * *

Prenatal and postnatal care
American Medical Association
Auxillary, Inc.
535 North Dearborn Street
Chicago, IL 60610
(312) 645-4470

* * * * * * * * * *

Do it Now Foundation
P.O. Box 21126
Phoenix, AZ 85036
(602) 257-0797

Cause and Defect. Questions and Answers About Fetal Alcohol Syndrome

Alcohol, Tobacco, Caffeine, and Pregnancy

* * * * * * * * * *

No Thanks . . . I Want a Healthy Baby
Prevention Resource Center
901 South Second Street
Springfield, IL 62701
1-800-252-8951

What Everyone Should Know About Fetal Alcohol Effects
Channing Betz Co., Inc.
200 State Road
South Deerfield, MI 01373
(413) 665-7611
1-800-628-7133

What You Should Know About . . . Babies and Booze
Oakland County Health Division
1200 N. Telegraph Road
Pontiac, MI 48053
(313) 858-1308

Fetal Alcohol Syndrome and Other Drugs Update
Prevention Resource Center
901 South Second Street
Springfield, IL 62704
(217) 525-3456

The Growing Child with Fetal Alcohol Syndrome
Thomas W. Perrin, Inc.
One Madison Street
East Rutherford, NJ 07073
(201) 777-2277

Fact Sheet: Fetal Alcohol Syndrome
Missouri Department of Mental Health
Division of Alcohol and Drug Abuse
1915 Southridge Drive
P.O. Box 687
Jefferson City, MO 65102

Facts on Alcohol-Related Birth Defects
National Council on Alcoholism, Inc.
12 West 21st Street
New York, NY 10010
(212) 206-6770
1-800-NCA-CALL

OR

National Council on Alcoholism, Inc.
1511 K Street, N.W.
Washington, D.C. 20005
(202) 737-8122

March of Dimes Birth Defects Foundation
1275 Mamaroneck Avenue
White Plains, NY 10605
(914) 428-7100

Healthy Mothers, Healthy Babies Quiz

Facts You Should Know About Teenage Pregnancy

You are Pregnant, You're in Your Teens, and You Need Help

Be Good to Your Baby, Before it is Born

Bookmark

D*A*T*A--Drugs, Alcohol, Tobacco Abuse During Pregnancy

Will My Drinking Hurt My Baby?

Babies Don't Thrive in Smoke-filled Wombs

* * * * * * * * * * *

Alcohol Warning Signs:
How to Get Legislation Passed in Your City
Center for Science in the Public Interest
1501 - 16th Street, N.W.
Washington, D.C. 20036
(202) 332-9110

* * * * * * * * * * *

Alcoholism and Substance Abuse Program,
Indian Health Service
Room 6A-53
5600 Fishers Lane
Rockville, MD 20857
(301) 443-4297

Keep the Pride

Alcohol and Pregnancy:
How Drinking May Harm the Unborn Baby

* * * * * * * * * * *

Drugs and Pregnancy
Health Department of Santa Barbara County
300 N. San Antonio Road
Santa Barbara, CA 93110
(805) 681-5440

Books and Journals

Alcohol Problems in Women:
Antecedents, Consequences and Intervention
Wilsnack, S. C. and Beckman, L. J. eds.
Guilford Publications
72 Spring Street
New York, NY 10012
Catalog #2164
Library

Women and Alcohol: Health-Related Issues:
U.S. Department of Health and Human Services
Library

Women and Alcohol: A Dangerous Pleasure
Youcha, G.
Crown Publishers
225 Park Avenue South
New York, NY 10003
(212) 254-1600, ext. 763

Preventing Fetal Alcohol Syndrome:
A Practical Approach for the Medical Educator
Library

Special Focus: Preventing Alcohol-Related Birth Defects
National Clearinghouse for Alcohol and Drug Information
P.O. Box 2345
Rockville, MD 20852
Request RPO 560

Alcohol and pregnancy: An overview and an update
Streissguth, A. P.
Library

Alcohol use during pregnancy
Kruse, J.
Library

Alcohol and the Fetus: A Clinical Perspective
Rosett, H. L. and Weiner, L.
Oxford University Press, New York, 1984

Just So It's Healthy
Robe, L. B.
Compcare Productions, Minneapolis, 1982

Drinking during pregnancy: Effects on Human Development
Landesman-Dwyer, S.
Alcohol and Health Monograph 2:
Biomedical Processes and Consequences of Alcohol Use, 1982

The Fetal Alcohol Syndrome
Quellette, E. M.
Developmental Handicaps:
Prevention and Treatment, 2: 26-42, 1984

Fetal Alcohol Syndrome:
Implications and counselling considerations
Elliott, D. J., and Johnson, N.
Library

Fetal Alcohol Syndrome and Fetal Alcohol Effects
Abel, E. L.
Plenum Publishing Corporation
233 Spring Street
New York, NY 10013
(212) 620-8000

The Effects of Alcohol on Pregnancy Outcome
National Clearinghouse for Alcohol and Drug Information
P.O. Box 2345
Rockville, MD 20852
Request RPO 496

Posters

No Thanks . . . I want a Healthy Baby
Prevention Resource Center
901 South Second Street
Springfield, IL 62701
1-800-252-8951

An Inner Voice Tells You Not to Drink
National Clearinghouse for Alcohol and Drug Information
P.O. Box 2345
Rockville, MD 20852
(301) 468-2600

No One That Young Should Drink
Oakland County Health Division
1200 N. Telegraph Road
Pontiac, MI 48053
(313) 858-5102

A Pregnant Woman Never Drinks Alone
New Mexico State Substance Abuse Bureau
P.O. Box 968
Santa Fe, NM 87503
(503) 827-5271

When you drink, your unborn baby does too!
Wisconsin Clearinghouse

Drinking, Smoking and Drug Use During Pregnancy
March of Dimes
1275 Mamaroneck Avenue
White Plains, NY 10605
(914) 429-7100

Audiovisuals

Drugs, Smoking and Alcohol During Pregnancy
Milner-Fenwick, Inc.
2125 Greenspring Drive
Timonium, MD 21093
(301) 252-1700
1-800-638-8652

* * * * * * * * * * *

One for My Baby

Wisconsin Association for Retarded Citizens
5522 University Avenue
Madison, WI 53705
(608) 231-3335

Wisconsin Human Genetics Education Center
104 Genetics Building, 445 Henry Mall
University of Wisconsin
Madison, WI 53706
(608) 262-9784

Central Wisconsin Center for the Developmentally Disabled
317 Knutson Drive
Madison, WI 53704
(608) 249-2151

PICADA
17 North Webster Street
Madison, WI 53703

* * * * * * * * * * *

Alcohol: Crisis for the Unborn
March of Dimes
1275 Mamaroneck Avenue
White Plains, NY 10605
(914) 429-7100

Pregnancy on the Rocks
Peter Glaws Productions
130 B Avenue
Coronado, CA 92118
(619) 435-3179

I Didn't Mean to Hurt You, Baby
Virginia Department of Mental Health/Mental Retardation
P.O. Box 1797
Richmond, VA 23214
(804) 786-1530

Taking a Drinking History and
Counseling and Referral
Documentaries for Learning
Massachusetts Mental Health Center
74 Fenwood Road
Boston, MA 02115
(617) 566-6793

Evergreen Express
Comprehensive Health Education Foundation
20814 Pacific Highway South
Seattle, WA 98188
(206) 824-2907

The Fetal Alcohol Syndrome:
A Nutrition Today Teaching Aid
Nutrition Today
P.O. Box 1829
Annapolis, MD 21404
(301) 267-8616

Alcohol and Pregnancy: Risks for the Fetus
Wisconsin Human Genetics Education Center

Curriculum Guides and Kits

Fetal Alcohol Syndrome Education Guide
and FAS Information Packet
State of California Alcohol and Drug Programs
111 Capitol Mall, Room 250
Sacramento, CA 95814
(916) 324-7260

Healthy Mothers, Healthy Babies Curriculum Package
March of Dimes Birth Defects Foundation
1275 Mamaroneck Avenue
White Plains, NY 10605
(914) 428-7100

A Secondary Level Curriculum on Fetal Alcohol Syndrome
Minnesota Prevention Resource Center
2829 Verndale Avenue
Anoka, MN 55303
(612) 427-5310

Better Beginnings for Babies Workbook
Washington-Greene Prevention Corporation
87 East Maiden Street
Washington, PA 15301
(412) 228-0810

Fetal Alcohol Syndrome Community Education Kit
California Urban Indian Health Council, Inc.
2422 Arden Way, Suite A-32
Sacramento, CA 92825
(916) 920-0313

Alcohol and the Fetus: A Teaching Package
Fetal Alcohol Education Program
Boston University School of Medicine
Seven Kent Street
Brookline, MA 02146
(617) 739-1424

Junior League of Hampton Roads
F.A.S. Committee
1310-C Todds Lane
Hampton, VA 23666

The Ozaukee Council, Inc.
125 North Franklin Street
Port Washington, WI 53074
284-3144
Metro 375-1110

Wisconsin Clearinghouse
University of Wisconsin - Madison
P.O. Box 1468
Madison, WI 53701

Spanish Language Publications

March of Dimes Birth Defects Foundation
1275 Mamaroneck Avenue
White Plains, NY 10605
(914) 428-7100

Tenga Beun Cuidado de su Bebe Antes de que Nazea
(Be Good to Your Baby Before it is Born)

Datos Que Usted Debe Saber Sobre
Las Adolescentes Embarazado
(Facts You Should Know About Teenage Pregnancy)

Afectara' a mi bebe' el tamar bebidas alcoholicas?
(Will My Drinking Hurt My Baby?)

* * * * * * * * * *

NCADI
P.O. Box 2345
Rockville, MD 20852
(301) 468-2600

Mi Bebe'...Fuerte y Sano
(My Baby...Strong and Healthy)
Request PH237

El Cuidado de su Bebe' Antes del Nacimiento,
Un Mensje para Mujeres Embarazadas
(Taking Care of Your Baby Before Birth)
Request PH239

* * * * * * * * * *

Las Drogas y Ci Embarazo
(Drugs and Pregnancy)
Departamento De Salud Del Condado
De Santa Barbara
300 North San Antonio Road
Santa Barbara, CA 93110
(805) 681-5440

Other Resources

FAS Curriculum for High Schools
Wisconsin Office on Alcohol and Other Drug Abuse

F.A.S./F.A.E. Bibliography
Wisconsin Clearinghouse

F.A.S. Media Kit
Wisconsin Clearinghouse

Bibliography

Blume, S. (1981). Drinking and Pregnancy. New York State Journal of Medicine, 81, 95-98.

Chasnoff, I. J. (1988). Drugs, Alcohol, Pregnancy and Parenting (3rd ed.). United Kingdom: Kluwer Academic Publishers.

Clarren, S. K. (1981). Recognition of fetal alcohol syndrome. Journal of the American Medical Association, 245, 2436-2439.

Clarren, S. K. (1982). The diagnosis and treatment of fetal alcohol syndrome. Comprehensive Therapy, 8, 41-46.

Chaukin, W. (1989, July 18). Help, Don't Jail, Addicted Mothers. New York Times, p. 5.

Davis, P. M. (1988). Warning label liability attacks liquor industry. Design News, 44, 150-151.

Department of Health and Human Services. (1982). Alcohol and Your Unborn Baby (DHHS Publication No. 82-521). Washington, D.C.: U.S. Government Printing Office.

Friedler, G. (1974). Long-term effects of opiates. Perinatal Pharmacology: Problem and priorities (pp. 207-216). New York: Raven Press.

Giunta, C. T. (1988). Patients with Fetal Alcohol Syndrome and their caretakers. Social Casework, 69, 457-459.

Gold, S. & Sherry, L. (1984). Hyperactivity, Learning Disabilities and Alcohol. Journal of Learning Disabilities, 17, 3-6.

Gunn, D. (1989, July 3). Attention focusing on birth defects and alcohol use. Milwaukee Journal, pp. 1, 5.

Haggard, H. W. & Jellinek, E. M. (1942). Alcohol Explored. Garden City, NJ: Doubleday.

Hanson, J. W., Jones, K. L., & Smith, D. W. (1976). Fetal Alcohol Syndrome: Experience with 41 patients. Journal of the American Medical Association, 235, 1458-1460.

Jones, K. L., Smith, D. W., Ulleland, C. N., & Streissguth, A. P. (1973). Pattern of Malformation in offspring of Chronic Alcoholic Mothers. Lancet, 1, 1267-1271.

Jones, K. L., & Smith, D. W. (1973). Recognition of the Fetal Alcohol Syndrome in early infancy. Lancet, 2, 999-1001.

Judges, 13:7. (1941). The Holy Bible. New York: Dovay Bible House.

Keller, M. & Gurioli, C. (1976). Statistics on consumption of alcohol and on alcoholism. New Brunswick, NJ: Rutgers Center for Alcohol Studies.

Kyllerman, M., Aronson, M., Sabel, K. G., Karlberg, E., Sandin, B., & Olegard, R. (1985). Children of alcoholic mothers growth and motor performance in children of alcoholic mothers compared to matched controls. Acta Paediatrica Scandinavia, 74, 20-26.

LaDue, R. A., & Schroeder, S. R. (Eds.). (1987). Fetal Alcohol: Teratogenic Causes of Developmental Disabilities in Toxic Substances and Mental Retardation. Washington, D.C.: American Association on Mental Deficiency.

Laitenen, T. (1909). A contribution to the study of the influence of parental alcohol on the degeneration of human offspring. Proceedings of the Twelfth International Congress on Alcoholism, 12, 263-270, London.

Lemoine, P. (1968). Children of alcoholic parents: anomalies observed in 127 cases. Quest. Med., 21, 476-482.

Lester, R. & Van Thiel, D. H. (1977). Gonadel function in chronic alcoholism. Advances in Experimental Medicine and Biology, 85A, 399-414.

Luke, B. (1977). Maternal alcoholism and the Fetal Alcohol Syndrome. American Journal of Nursing, 77, 1924-1926.

Macdonald, D. I. & Blume, S. A. (1986). Children of Alcoholics. American Journal of Diseases of Children, 140, 750-754.

Minor, M. (1982). Prevention research on the teratogenic effects of alcohol, Preventive Medicine, 11, 346-359.

National Clearinghouse for Alcohol Information. (1975). Fact Sheet: Women and alcohol. National Institute of Alcohol Abuse and Alcoholism.

National Council on Alcoholism Inc. (Revised May 1987).

National Council on Alcoholism. (1987). Product liability suits filed against alcoholic beverage industry on behalf of fetal alcohol children.

Niven, R. G. (1986). Alcohol-Related Birth Defects. San Diego: University of California, San Diego Program on Alcohol Issues.

No Social Drinking for Pregnant Women. (198_). Science News, 120, 53.

Opirhory, G. J. (1979). Counseling the parents of a critically ill newborn. Journal of Obstetric, Gynecologic and Neonatal Nursing, 8, 179-182.

Ottney, J. (1986). Alcohol, Other Drugs and Pregnancy: Risks for the Fetus. Wisconsin Clearinghouse.

Quellette, E. M. (1977). Adverse effects in offspring of maternal alcohol abusers during pregnancy. New England Journal of Medicine, 297, 528-530.

Robe, L. B. (1982). Just So It's Healthy. Minneapolis, MN: Compcare Publications.

Rosett, H. L., Weiner, L., Lee, A., Zuckerman, B., Dooling, E., & Oppenheimer, E. (1983). Patterns of alcohol consumption and fetal development. Obstetric Gynecologic, 61, 539-546.

Rosett, H. L. & Weiner, L. (1984). Alcohol and the Fetus: A Clinical Perspective. New York: Oxford University Press.

Rosett, H. L., Weiner, L., Zuckerman, B., McKinlay, S. & Edelin, K. C. (1980). Reduction of alcohol consumption during pregnancy with benefits to the newborn. Alcoholism: Clinical and Experimental Research, 4(2), 178-184.

Schechter, D. M. (1986). Alcohol Warning Signs: How to get Legislation passed in your city. Washington, D.C.

Sokol, R. J. (1980). Alcohol abuse during pregnancy: Clinical research problems, 2, 157-165.

Stephens, C. J. (1981). The Fetal Alcohol Syndrome: Cause for concern. The American Journal of Maternal Child Nursing, 6, 4.

Streissguth, A. P., Herman, C. S., & Smith, D. W. (1978). Intelligence, behavior, and dysmorphogenesis in the Fetal Alcohol Syndrome: A report on 20 patients. Journal of Pediatrics, 92, 363-367.

Streissguth, A. P., Martin, J. C., & Martin, D. C. (1978). Experimental design considerations and methodological problems in the study of the effects of social drinking on the outcome of pregnancy. Alcoholism and Drug Abuse Institute Technical Report, 78-01. Seattle, WA: University of Washington.

Streissguth, A. P., Herman, C., & Smith, D. (1978). Stability of Intelligence in the Fetal Alcohol Syndrome: A preliminary Report. Alcoholism: Clinical and Experimental Research 2 (2, b), 165-170.

Streissguth, A. P., Clarren, S. K., & Jones, K. L. (1984). A 10-year follow-up of the first children described as having Fetal Alcohol Syndrome. Alcoholism: Clinical and Experimental Research 8:21.

Umbreit, J. & Ostrow, L. S. (1980). Fetal Alcohol Syndrome. Mental Retardation, 181 109-111.

U.S. Department of Health and Human Services. (1981). Preventing Fetal Alcohol Effects: A Practical Guide for Ob/Gyn Physicians and Nurses (DHHS Publication No. ADM 83-1163). Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1982). Alcohol and birth defects: The Fetal Alcohol Syndrome and Related Disorders. Rockville, MD

U.S. Department of Health and Human Services. (1986). Helping Children from Alcoholic Families: Approaches and Caregivers. Children Today, 15, 14-15.

Virginia Cares. (1985). Prevention and Promotion Bulletin.

Wisconsin Association on Alcoholism and Other Drug Abuse. (1979). Fetal Alcohol Syndrome--Related Demographics.

Wisconsin Clearinghouse. (Revised July 1986).

Wisconsin Fetal Alcohol Syndrome Workgroup. (1986). Madison, WI.

Zerrer, Peggy. (1986). Fetal Alcohol Syndrome. American Medical News, 28, 10-11.