

IMPORTANCE OF EDUCATION ABOUT FETAL ALCOHOL SYNDROME
AND ITS EFFECT ON CHANGING ATTITUDES ABOUT
DRINKING ALCOHOL AMONG INDIAN WOMEN IN A TREATMENT CENTER

BY

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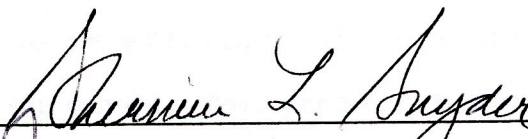
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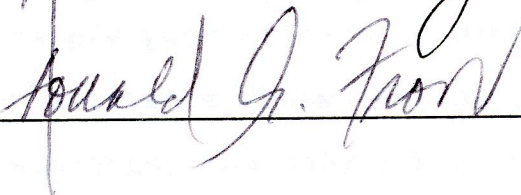
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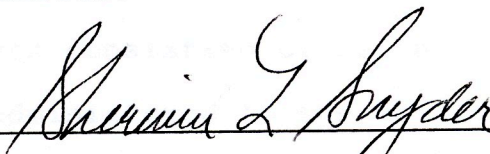


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ABSTRACT

Documentation of the severity of Fetal Alcohol Syndrome, drawn from literature reviews and interviews with counselors in a treatment center for alcohol abuse located in a downtown Phoenix, Arizona area, indicated a need for education about the deleterious effects of alcohol on pre-born babies.

This Master's Research Project was designed to expand on available information relating to FAS by providing education about the effects of alcohol on pre-born babies, then testing for any change in attitudes which might result from the information given. The project began with the selection of a sample population of Indian women in a treatment center for substance abuse (the sample size consisted of eight subjects, the only subjects available for the project), who were then presented with education about the effects of alcohol on pre-born babies.

Pre-tests and post-tests consisting of seven identical test items were administered to the sample group.

Even though the sample size was small, and the

results did not prove conclusively that this particular educational project significantly changed the opinions of the test subjects, the data did show interesting patterns of responses which indicated pre-existing attitudes concerning mental retardation relating to FAS.

Given these patterns of responses, a follow-up survey consisting of eleven questions concerning physical and mental problems related to FAS was given to a similar group from the same substance abuse facility.

The size of the follow-up survey was eleven subjects, which was larger than the original test group of eight subjects. Results for the follow-up study were not statistically significant due to the small number of subjects, yet the survey indicated a need for more education about mental retardation as it relates to Fetal Alcohol Syndrome.

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CHAPTER 1

THE PROBLEM

Introduction and Background

The effects of Fetal Alcohol Syndrome (FAS) are being felt throughout many communities in the United States, but perhaps most strongly among the Native American Indian population.

The effects of FAS are costing millions of dollars to industry and health care systems, thereby requiring strong measures to be taken concerning education which would provide a proactive stance to help minimize some of the effects of FAS.

Since the effects of alcohol abuse are a serious health problem among the American Indian population, educational measures directed at reducing the incidence of FAS are important as an effort to combat this problem.

Some of the effects of Fetal Alcohol Syndrome include physical abnormalities such as head and face deformities, heart defects, retarded growth, low birth weight babies, organ malfunctions, mental retardation and hyperactivity

(Gelfand, Jenson, Drew, 1982).

Examples of physical manifestations of FAS include small, widely spaced eyes, overgrown eyelids, thin upper lip, a flattened-out nose, low-set ears, exceptionally small head, different bone and joint disorders and abnormalities of the genitals of baby girls. Also included are dysfunctions of the central nervous system, abnormalities of the ear, eye, heart, lip and palate and most are mentally retarded (Gelfand, Jenson, Drew 1982).

Attention Deficit Disorder and Hyperactivity are also common in these children, costing millions of dollars in funding for their special needs as children, yet millions of more dollars might be expected to be spent on this population as they grow into adults and still require special training or other care (Abel, 1991).

It is crucial to develop programs that might help reduce or eliminate the effects of FAS. Therefore, education directed especially at Indian women who are known risks for contributing to FAS and those who are in a treatment center for alcohol abuse, would be a way to attempt to reduce the effects of FAS.

Education for this special population will require special approaches and techniques that are culturally relevant and acceptable to members of this particular group (Abel, 1991).

Studies, which will be explored more in depth in Chapter 2, point to the need for educators and other health care workers to develop a respect and understanding for the values of the American Indian community in order to be effective.

Some examples of values that some American Indians hold, but are at odds with the values of many people in the dominant, non-Indian culture include but are not limited to: a non-material orientation to life, sharing of property, valuing the group over the individual, cooperation instead of competition and a reduction in verbal displays suggestive of personal superiority. Many times these same values that are so important to the Indian community are misunderstood by the non-Indian, leaving the Indian person vulnerable to feelings of low self-esteem and helplessness.

With effort and proper research, however, a program can be designed that will take into consideration the differences between the Indian and non-Indian, and result in education that is meaningful and effective.

The program developed for this study was an attempt to change the attitudes about drinking alcohol during pregnancy among Native American women who are in a treatment center for alcohol abuse.

Statement of the Problem

Fetal Alcohol Syndrome is costing millions of dollars to industry, yet it is a problem that can be lessened by a cognitive decision, the decision that a pregnant woman would make about avoiding drinking alcohol during pregnancy.

If attitudes about drinking alcohol were to be changed, then the behavior of drinking alcohol during pregnancy might change as a result of the change in attitude.

Therefore, the problem of this study is to determine whether education about the effects of alcohol on pre-born babies will change the attitudes about drinking alcohol during pregnancy among women who are in a treatment center for alcohol abuse.

Purpose of the Study

The purpose of this study is to determine if education about the effects of alcohol on pre-born babies will change the attitudes about drinking alcohol while pregnant among the population of women who are in a treatment center for alcohol abuse.

Basis for the Study

Available information concerning Fetal Alcohol Syndrome suggests that the effects of FAS are due to the decision of a pregnant woman to consume alcohol.

Some of the effects of FAS are a deformed facial appearance manifested by small eyes, short nose, flattened nasal bridge, narrow upper lip, small chin and flat mid-face (Gelfand, Jenson, Drew, 1982).

Furthermore, follow-up studies of babies born to alcoholic mothers have shown that even those with no apparent physical deformities have significantly lower I.Q.'s than children born to women who are not alcoholic but who are similar to alcoholic mothers in other respects. It is also true that alcoholic mothers' offspring who have the most physical deformities also tend to be the most severely retarded (Gelfand, Jenson, Drew, 1982).

Following the effects of FAS as a stimulus promoting this study are the educational implications of learning and modification of attitudes about drinking alcohol.

The modification of attitudes, referred to some as the affective domain of objectives, is of great importance to educational programs of every kind.

Practical training programs usually incorporate objectives that represent attitudes toward work,

performance standards and social living. In addition, many programs are concerned with teaching attitudes toward the avoidance of harmful drugs and alcohol.

Attitudes have both cognitive and behavioral components. That is to say they are internally mediated in part and outwardly manifested by a change in behavior. For such purposes, a useful definition of attitude is a learned internal state which influences choices of personal action towards some object or event. The aim of instruction is to establish or strengthen particular internal states which perform this function (Gagne, 1977).

Since it is established that attitude change is a product of education (Gagne, 1977), then education concerning the effects of alcohol on pre-born babies will probably affect change in drinking patterns in pregnant women, namely, a lessening or cessation of drinking alcohol while pregnant.

Research Question

The research question answered by this study was, "would education about the detrimental effects of alcohol on pre-born babies affect a change in attitude about drinking alcohol among women who are in an Indian rehabilitation center for alcohol abuse?"

Significance of the Study

The significance of this study impacts not only the Indian community by lowering the incidence of Fetal Alcohol Syndrome, but also its effects could be felt at both the state and national level as health care costs are lowered due to a lessening of the incidence of FAS.

School systems could also be affected because there would be fewer children with the special needs of the FAS child for special consideration.

Children with FAS are frequently affected with the same disorder as hyperactive children or the attention deficit disorder child, a disorder known to impact the classroom.

Children with Attention Deficit Disorder (ADD) often fail to finish things they start, don't seem to listen, are easily distracted, have difficulty concentrating on school work, act before thinking, need much supervision, cannot sit in their seats, and frequently speak out in class (Gelfand, Jenson, Drew, 1982).

However, perhaps most important is the individual impact on the afflicted FAS child and his or her family.

Operational Definitions of Terms

FAS - Fetal Alcohol Syndrome, a term coined to describe

a pattern of abnormalities observed in children born of alcoholic mothers.

Indian community - all Indian people, whether living on an Indian reservation or in an urban environment

Indian reservation - land that is set aside by either the federal government (federal Indian reservations) or land that is determined at the state level to be set aside for the Indian population (state reservations)

tribal social worker - social worker who is hired to work for an Indian tribe

Indian alcohol programs - programs that are culturally sensitive to the needs of Indian people

Indian Health Service - branch of health service which is controlled and administered by the BIA

BIA - Bureau of Indian Affairs

Assumptions and Limitations

It was assumed that Indian women in a treatment center for alcohol abuse were receptive to receiving

information that would benefit both them and their future unborn children.

This led to the assumption that education about the detrimental effects of drinking alcohol while a woman is pregnant would lead to a lessening in drinking behavior and thereby reduce the overall incidence of Fetal Alcohol Syndrome.

Organization and Remainder of the Study

Chapter two

Chapter two presents the literature review, including available and accessible information which was relevant to Fetal Alcohol Syndrome. Some of the information came from journals and texts while other information came from articles gleaned from the Indian Health Service and National Clearinghouse for Alcohol Abuse.

Chapter two also discusses data demonstrating the incidence of FAS as costly, preventable, and that education is one way of reducing the occurrence of FAS.

Chapter three

Chapter three covers the methodology used (the descriptive study design), population samples and how the population was obtained, the instrumentation used (sample questionnaire), and testing procedures.

Chapter four

Chapter four consists of a presentation and analysis of data which includes the results of the study, the research question and a discussion of the data.

Chapter five

Chapter five contains the summary, conclusions and recommendations as well as information on further research which might be conducted relating to this study.

CHAPTER 2

LITERATURE REVIEW

Alcohol is now recognized as one of the leading causes of birth defects in the western world (Abel, 1990). Accordingly, the effects of Fetal Alcohol Syndrome, sometimes referred to as FAS, are being manifested throughout American Indian communities of the United States population.

Economic indicators show that the effects of FAS are costly to the public because of the myriad special services needed for the FAS afflicted person.

In an article written by E. L. Abel, at Wayne State University in 1991, an estimate of the economic impact of Fetal Alcohol Syndrome is discussed. Headings within the article include: (1) pre-and postnatal growth retardation, (2) organic abnormalities, and (3) mental retardation.

Cost estimates for specific FAS-related problems, prevalence of FAS among mentally handicapped persons and alternate methods of estimating costs are presented.

It is concluded in this article that the annual cost for FAS in the United States is approximately a quarter of a billion dollars, a figure that can be used as a benchmark for judging costs of potential prevention strategies (Abel, 1991).

These costly effects of FAS are showing up in the Human Resource setting with the implementation of programs designed to combat this serious threat to the organization and society. In addition, increased taxes as well as higher health care costs are together demanding a strategy to meet this problem.

Programs that are to be designed for American Indians in the work-place should be culturally sensitive to the unique needs of that group since specific cultural characteristics of the American Indian may cause problems in the work-place (Hayman, 1989).

Hayman (1989), also writes that some of the problems of the American Indian stem from the beliefs and values of sharing instead of competition, a belief in the present moment being all important, a wariness of white people, a memory of places instead of dates, and belief that good will triumph over bad.

Mr. Hayman states further in the article that alcoholism and related illnesses are the primary health problems that Indians face. According to him, some studies cite an 80-85 percent alcoholism rate among American

Indian males and a 35-55 percent rate among females. Therefore, he reasons, if EAP professionals are to be successful treating this population, they must be sensitive to Indian culture and gain the Indian's trust, often with the assistance of another American Indian practitioner (Hayman, 1989). Education, prevention and better health care are all issues requiring strong measures from the Human Resource system to meet the needs of FAS affected populations and thereby reducing future costs.

Education directed at the source of Fetal Alcohol Syndrome, pregnant women who drink alcohol, is a definite preventive measure to combat the high costs of caring for FAS afflicted children, but the education might also sensitize the mother about the issues of drinking alcohol and thereby possibly lead to a reduction in the incidence of drinking alcohol (May, 1989).

According to Arkin (1990), a 1992 Surgeon General's report approximately 5,000 babies are born each year with FAS, and 50,000 more are born with Fetal Alcohol Effect, a milder form of FAS. On some Indian reservations it is estimated that the rates of FAS are as high as 30 times the national average (Abel, 1991).

The effects of alcohol abuse in the general Indian population have become the single most serious health care issue and account for the three leading causes of

death among Indian people (NIAA report, 1989).

Added to the health threats are the high costs of institutional and medical care for one FAS child which amounts to more than \$1.4 million (Abel, 1991).

Education about the effects of alcohol on pre-born babies is a strategy needed by organizations both public and private to help alleviate the effects of FAS.

Effects of Fetal Alcohol Syndrome

Some effects of FAS include mental retardation, hyperactivity, head and face deformities, heart defects and other organ malfunctions and retarded growth (Comer, 1992).

Some of the physical manifestations include facial deformities such as widely-spaced eyes, overgrown eyelids, thin upper lip, a flattened-out nose, low-set ears and an exceptionally small head (Mendleson & Mello, 1987).

Varying bone and joint disorders, heart defects and abnormalities of the genitals of baby girls are also seen in FAS children (Hill, 1989).

A newsletter of the National Institute on Alcohol Abuse and Alcoholism (Alcohol Alert, 1991, P 1-4) defines Fetal Alcohol Syndrome in this manner: Fetal Alcohol Syndrome is a term coined to describe a pattern of abnormalities observed in children born of alcoholic mothers.

Criteria for defining FAS were standardized in 1980 and the following modifications were proposed in 1989: (1) prenatal and/or postnatal growth retardation (weight and/or length below the 10th percentile); (2) central nervous system involvement, including neurological abnormalities, development delays, behavioral dysfunction, intellectual impairment, and skull or brain malformations; (3) a characteristic face with short eye openings, a thin upper lip, and an elongated, flattened mid-face and a flattened groove in the middle of the upper lip.

The article goes on to state that mental handicaps and hypersensitivity are the most debilitating aspects of FAS, and prenatal alcohol exposure is the leading cause of mental retardation. The article also cites other FAS studies as being complicated by methodological problems. Methods of data collection that are discussed in detail are: (1) retrospective studies and prospective studies and other issues such as (2) incidence of FAS among ethnic groups; (3) amount of alcohol that causes FAS; and (4) the need for better screening techniques to identify pregnant women at high risk for alcohol abuse.

Also contained in this article is a commentary by the Director of the National Institute on Alcohol Abuse and Alcoholism, Dr. Enoch Gordis, and a supplemental article discussing advances in alcoholism treatment research (NIAAA, 1991).

Another excellent resource for the effects of FAS is found within a journal article written by I.E. Smith of Emory University School of Medicine.

The article discusses multilevel intervention strategies for the prevention of FAS and also discusses Fetal Alcohol Effects (FAE), a milder form of Fetal Alcohol Syndrome.

Headings within the article include: (1) defining the risk of FAS, a multi-factorial model; (2) dose and patterning of alcohol consumption during pregnancy; (4) case reports; (5) polydrug abuse; (6) lifestyle and social environment; (7) developing multilevel prevention strategies; (8) community education and professional training; (9) intervention with the alcohol-using pregnant woman; (10) intervening with the alcohol-affected child; (12) accurate identification; (13) inconsistency in follow-up; and (14) gaps in services provided (Smith, 1991).

In a journal article which appeared in Social Casework, 1988, the authors, C.T. Giunta and A. P. Streissguth discuss the identification of patients with Fetal Alcohol Syndrome, their characteristics, their needs, and the needs of those who care for them.

Also discussed were growth deficiencies (before and after birth), distorted facial features, and dysfunction of the central nervous system. The journal

article also outlined the children's medical needs which may include attention to abnormalities of the ear, eye, heart, lip and palate as well as abnormalities of the teeth and skeleton.

The article states further that FAS patients may have particular needs for education about sex and birth control. Their educational needs may include early mental and motor stimulation, attention to delays in development and language acquisition, speech education, special education and vocational training.

Continuing in the article are observations that physical abuse, sexual abuse and neglect can be particularly likely for FAS patients. Sheltered, structured living situations, including possible foster care are often required. Requisite community services and resources are described along with the needs of caretakers of FAS patients being discussed. This can include information, support, advocacy, financial aid, respite care and remedial parenting classes (Giunta and Streissguth, 1988).

In a study conducted by Church at Wayne State University in 1988, research showed how serious otitis media (middle ear infection) occurs in children with Fetal Alcohol Syndrome, and compares the incidence with that of children with other craniofacial anomalies and to children in general, and to study how often episodes

occur and how early they start and how long they last. Standard audiologic procedures were used to evaluate 14 children with Fetal Alcohol Syndrome and hearing disorders were found in 13 of the 14 children (93 percent).

All 13 had a significant history of recurrent serious otitis media in both ears. At least four children (29 percent) also had hearing losses in both ears.

In addition, repeated surgeries with the placement of ventilation tubes in the ears were required for the children with recurring serious otitis media; those with hearing loss needed sound amplification (hearing aids).

The results of this study suggest that hearing disorders may be characteristic of Fetal Alcohol Syndrome not before recognized (Church, 1988).

Children afflicted with FAS are many times unable to understand cause and effect relationships, and experience behavioral difficulties (Gatozzi, 1986).

Behavioral disabilities such as Hyperactivity and Attention Deficit Disorder (ADD) are manifested in a failure of the child to finish things he or she starts, cannot concentrate on tasks at hand, cannot sit still in his or her seat, needs much supervision and frequently speaks out in class (Gelfand, Jenson, Drew, 1982).

These types of behavior suggest problems with cognitive development as contributing to the difficulties

that FAS children face.

An example of problems of cognitive development in FAS American Indian children is cited in a study by L.J. Carney (1991) at Washington State University. This study outlines the performance of Indian FAS afflicted children as related to a language test.

The research sample consisted of 10 American Indian children diagnosed FAS and 17 normal American Indian children. The FAS children demonstrated cognitive function ranging from borderline normal to a moderate degree of mental retardation.

The Test of Language Development-Primary (TOLD-P) and the Test of Language Development-Intermediate (TOLD-I) were administered to both the FAS children and to the control group (normal children) along with screening measures.

The study results revealed that the mean performance of the FAS group was poorer than that of the control group on all but one of the subtests of the TOLD-P, while a mean performance of the FAS group was also poorer than that of the control group on 3 out of 5 TOLD-I subtests. The older FAS children demonstrated syntactic deficits while the younger FAS children demonstrated more global language deficits.

An article in the Journal of the American Medical Association written in 1991 by A.P. Streissguth presented

information about a systematic follow-up study which examined adolescent and child manifestations of Fetal Alcohol Syndrome. Patients who were previously diagnosed as having FAS were 12 years or older at the time of the follow-up and participated in the study.

Elaborating further, the article states that FAS was diagnosed when patients had a positive history of maternal alcohol abuse during pregnancy and (1) growth deficiency of prenatal origin, (2) a pattern of specific minor abnormalities that included a characteristic FAS conformation and (3) central nervous system manifestations.

Variables considered at the time of follow-up were physical characteristics, intellectual functioning and family environment. Major psychosocial problems and life-long adjustment problems were characteristic of most of these patients.

Short stature and microencephaly appeared to be the most important growth deficiencies as the children got older.

Facial abnormalities were more subtle in adults with FAS than with children with FAS.

These patients also displayed developmental and cognitive handicaps, attention deficits, problems with judgment comprehension and abstraction.

The average academic functioning was early grade

school level and average IQ level was 68. It is concluded in this article that FAS is not just a childhood disorder, since there is a predictable, long-term progression of the disorder into adulthood in which maladaptive behaviors present the greatest challenge to treatment (Streissguth, 1991).

A 1989 book written by the same author, A.P. Streissguth explored these issues in depth. This 1991 follow-up study evaluated 61 adults and adolescents who had previously been diagnosed FAS (70 percent) or had Fetal Alcohol Effects (FAE) (30 percent). They ranged in age from 12 to 40 years and 70 percent were 12 to 18 years old.

The results indicated that (1) the average intellectual level of 52 patients tested was considerably mildly retarded (average IQ was 68) with FAS patients having an average of 66 and FAE patients an average of 73; (2) the average reading, spelling, and arithmetic level of these patients was elementary grade; (3) no indication of improvement in IQ, achievement or adaptive living scores as the patients got older; (4) Government services for handicapped persons are not routinely available for persons with IQ scores of 70 and above; (5) biological mothers of these patients had grave difficulties assuming maternal responsibility and most died prematurely; (6) most of the patients (77 percent)

did not live with either biological parent on follow-up (7) neglect and abuse appeared high; and (8) communication among community agencies regarding the needs of patients with FAS/FAE seemed poor both on reservations and in urban areas (Streissguth and La Due, 1987).

Alcohol abuse among Native American Indians

Alcohol abuse has become the single most serious health problem among American Indians. The incidence of alcoholism is estimated to be over five times that of the general population. Females account for over half of cirrhosis of the liver deaths. Among 15-24 year olds, cirrhosis mortality for Indian females is three times that of Indian males (NIAAA, 1992).

These facts strongly suggest that Indian women of child-bearing age are at a higher risk for alcohol abuse, and therefore potentially for the cause of FAS than women of other ethnic groups.

Other evidence concerning the drinking behavior of women who are more at risk of giving birth to FAS babies is discussed in a journal article by M. Russel which appeared in the Bulletin of the New York Academy of Medicine in 1991, six research projects on FAS were reviewed. Headings within the article include: (1) socioeconomic status of drinking cohorts; (2) effects of moderate vs. "alcoholic" drinking; (3) binge drinking

vs. average alcohol intakes; (4) paternal drinking; (5) vulnerability factors; and (6) exploratory vs. confirmatory analysis.

The study results of four out of the six projects indicated significant deficits in cognitive or neurobehavioral development that was associated with maternal drinking or indications of problem drinking during pregnancy (Russell, 1991).

Another article aimed at prevention was written by J.E. Trimble for the White Cloud Journal of American Indian Mental Health in 1984.

The article indicates an increased need for drug abuse prevention research among Native Americans. The article states further that alcoholism affects 80-85 percent of Indian males and 35-55 percent of Indian females, depending on the tribe.

Elaborating, Mr. Trimble says that there is considerable variation in drinking behavior and that drinking starts at a young age. Negative adult model's behavior is highly visible, drinking is a way of becoming socially acceptable and that motor vehicle accidents, fatalities due to fires, firearms, drowning, suicides and cirrhosis of the liver due to alcohol abuse are far higher in this population than all others of the United States.

The author also says that roughly half of the almost

1.5 million Indians remain living on reservations and that others live in cities, primarily in the West and Midwest. He says that not enough is known about the complexity of drug and alcohol abuse among Indians.

He does say that researchers suggest that heavy drinking may be associated with anxiety, dependency, conflict and feelings of powerlessness (Trimble, 1984).

An interesting study that provides an alternate view of drinking behavior among American Indians was conducted by P.A. May (1989) at the University of New Mexico. This study examines the relationship of the "drunken Indian stereotype" to the perceptions people have of Native Americans and the effects of this stereotype on the prevalence of alcoholism and its prevention and treatment among the Native American Indians.

The study further describes the characteristics of the U.S. Indian population, historical details related to alcohol use among Indians, and recent research on biological effects of alcohol consumption among Indians.

May states that the results of recent epidemiological studies on the prevalence of adult alcohol use in various Indian tribes reported: Standing Rock Sioux, 58 to 69 percent; Ute, 80 percent; Navajo, 30 to 52 percent; Ojibwa, 84 percent, and compared that consumption to that of the U.S. general population, 67 percent (May,

1989).

In these studies, May further examines the prevalence of alcohol related problems among Indian populations, including mortality rates attributable to alcohol and other causes, arrests and Fetal Alcohol Syndrome.

Also examined in the studies are susceptibility to alcohol and drug abuse among Indians and drinking styles, including recreational use, anxiety drinking, moderate drinking, and abstention from drinking.

The overall results indicate that Indians metabolize alcohol as fast or faster than non-Indians, that Fetal Alcohol Syndrome rates among some tribes are not higher than in European countries, that there are a variety of Indian drinking styles, and that a large proportion of the problem behaviors associated with alcohol are caused by a small number of Indians (May, 1989).

In a study that supports the view that American Indians have higher alcohol-related deaths than other groups, C.M. Christian (1989) wrote about tribal differences concerning alcohol-related mortality in Oklahoma. Mortality statistics were obtained from the National Center for Health Statistics' multiple cause national data file. The results showed differences between Indian tribes, blacks and whites.

Of 267,238 deaths in Oklahoma from 1968 to 1978, 9.3 percent of Indian deaths, 3.2 percent black deaths,

and 2.4 percent of white deaths were classified as alcohol-related (Christian, 1989).

In addition, Cheyenne-Arapaho, Comanche and Kiowa areas have a higher incidence of alcohol-related deaths than Cherokee, Choctaw, Creek and Seminole, and Pawnee areas. These patterns of mortality may be related in some manner to cultural and historical differences between the tribes (Christian, 1989).

Still other statistical evidence that indicates the risk of FAS is a growing problem among young Indian women is that of a high birth rate. Births to Indian girls age 10-14 years old are up by 95%, among 15-19 year olds the rate is up 34% (NIAAA, 1992).

There are many factors which predispose Indian people to abusing alcohol, some which are the result of political and social issues stemming from over 500 years of contact between Indians and non-Indians. In an article written by R.A. LaDue in 1991, some of the problems of alcoholism among Native American women are explored.

The loss of cultural ties and values have greatly contributed to Indian alcoholism, greatly affecting Indian women who are away from their traditional centers of support.

The article states that Indian women who are away from their familial, spiritual or community supports appear to be at a higher risk for alcohol abuse.

The author puts a focus on alcohol being primarily an obstacle to survival and presents information regarding drug and alcohol abuse and interacting issues such as high school drop out rates, economic deprivation and the loss of effective role models for native youths.

The triad of alcoholism, violence and depression has been cited as the most serious social and health problems facing Indian women.

Specific issues examined are: (1) why do Indian women drink? (2) health problems among Native American women, (3) Fetal Alcohol Syndrome and effects among Native women, and (4) alcohol's impact on education and economies, development of depression, family violence, child abuse and neglect (LaDue, 1991).

Drinking patterns for Native Americans begin sometime during the ages of 10-13 years according to a journal article written by J.O. Okwumabua in 1987.

Outlined in the article was a survey to examine the age of onset, patterns of progression and periods of risk for drug use among Native Americans.

A sample of 277 Native American students (grades 7 to 12) was surveyed, with the results suggesting that Native American youths begin smoking cigarettes and marijuana, drinking alcohol, sniffing solvents and using cocaine as early as 10 years of age (Okumabua, 1987).

Additionally, in another article written by F. Beauvais of Colorado State University, 1989, continuing surveillance of drug use among American Indian adolescents living on reservations shows them to have rates of substance use higher than their non-Indian counterparts. By the seventh grade, a significant number of Indian youths have tried marijuana and alcohol, and there are few significant differences by gender. Based on observed patterns of substance use, intervention strategies need to begin in the elementary school years and target both males and females equally (Beauvais, 1989).

Education affecting attitude change

Attitudes have both cognitive and behavioral components. They are internally mediated and outwardly manifested as behavior that is observable. The aim of instruction is to establish or strengthen particular internal states which change behavior (Gagne, 1977).

Relevant information pertaining to situations in which choice of action are likely to be made are important components of attitude change (Gagne, 1977).

Also important is the source, or human model with which the learner usually identifies. The program outlined in this study will be implemented in an Indian rehabilitation center for alcohol abuse, therefore the instructor should ideally be an Indian woman who has

successfully recovered from the effects of alcohol abuse and who has an FAS child. For the most effective results the model needs to be seen as attractive, powerful and highly credible (Gagne, 1977).

An example of this modeling can be seen in a prevention program designed by K.J. Plaisier (1989) of The University of Colorado Health Sciences Center where Indian health workers and Indian women who had recently delivered an infant discussed health plans and materials to provide information about FAS.

The study results indicated that information about FAS is reaching these women and is well-received and that traditional cultures can support a women's health care program and more efforts must be made to reach those women at greatest risk for alcohol abuse and FAS (Plaisier, 1989).

Some educational approaches to combat alcoholism and thereby reduce the incidence of FAS might include information from several sources, one of which is described in a seven year research effort that addresses the question, "What makes Indians Drink?"

This research, done by P. Colorado (1988) from Brandeis University, suggests that culture-specific treatment is the most effective, efficient and acceptable treatment for Indian people.

The research design of the study is bi-cultural

and qualitative. From a Western Science perspective, the qualitative analysis uses a "levels of analysis" approach which allows for a triangulation of data. The levels include: (1) a review of Indian alcoholism literature, (2) a review of five hundred years of government Indian policy, (3) interviews with Indian alcoholics and traditional experts, and (4) field work including a two month study tour of the People's Republic of China and a six-month work experience in a mental health program designed to liberate enslaved consciousness.

Colorado elaborates further about the Traditional Indian Science perspective, the mode of inquiry using the Medicine Wheel which calls for balance in the 7 directions. The basic methodology involved Indian ceremonies and guidance from traditional spiritual elders.

The study concluded that Indian alcoholism is a result of three hundred years of U.S. colonialism and that institutionalized systems of greed have expropriated Indians physically, socially economically emotionally and spiritually (Colorado, 1988).

Using the sources in the literature review, a strong program can be designed which will educate Indian women who are in a treatment center for alcohol abuse about the detrimental effects of alcohol on pre-born babies, thereby reducing the incidence of FAS.

Using education to lower the incidence of FAS will also reduce health care costs to the public and private sector which will be measured in increased profits and less taxes for both.

In conclusion, education about the effects of alcohol on pre-born babies can be an important measure affecting not only the affected FAS child and his or her family, but in addition it will reduce health care costs which will result in lower taxes.

CHAPTER 3

METHODOLOGY

The purpose of this study was to determine if education about the effects of alcohol on pre-born babies will change the attitudes about drinking alcohol while pregnant among the population of Indian women who are in a treatment center for alcohol abuse.

Description of Methodology Used

The research design method used in the study consisted of a descriptive study. Randomization was not always possible, so homogeneous selection was used.

A disadvantage of the homogeneous selection was that the predictive powers of the method were reduced since it is difficult to extrapolate results to another group or setting. However, this was the best method for this particular study.

Design of The Study

The manner in which the study was conducted was

through the use of pre-tests and post-tests, respectively given before and after the subjects received information about the effects of alcohol on pre-born babies.

The educational session covered a period of two hours class time. Immediately before the instruction, a pre-test was given which measured current attitudes about the effects of alcohol on pre-born babies, and attitudes about the effects of drinking alcohol. Immediately following instruction, a post-test was administered which measured any attitude change about drinking alcohol, especially during pregnancy.

Sample Population

The sample population consisted of Indian women who are in a treatment center for alcohol abuse. The sample size was small, eight subjects in all, because that was the only number available (for the study) with a population of Indian women in treatment for alcohol abuse in the Phoenix, Arizona area. The population of all women in the treatment center were included, whether they were of child bearing age or not, as this gives a good representation of the population in the treatment center. It was important to include all women in the treatment center since attitudes that might be learned from the study's educational session could possibly be transmitted to other female relatives of the women in

the treatment center, thereby possibly lowering the incidence of alcohol abuse by other Indian women, especially during pregnancy.

Instrumentation Used

The instrumentation consisted of a pre-test and a post-test, both of which were identical questionnaires which measure attitudes about drinking alcohol, especially during pregnancy (see appendix A).

The instrument used for testing was designed by the researcher because there were no standardized tests available which measure attitudes concerning drinking alcohol and alcohol's effects on pre-born babies, specifically relating to the population of Indian women in a treatment center for substance abuse in the Phoenix, Arizona area.

Face validity was the criterion for determining the use of the test. Reliability was not documented because of the time constraints imposed upon this particular study.

Data Collection and Procedures

Data collection consisted of administering eight pre-test questionnaires immediately preceding education, by the instructor (the researcher) in a group recreation room of the rehabilitation facility. The instructor read

the pre- and post-test items to the sample group. The group members then circled their answers on the questionnaires with a pencil. Immediately following the testing, the questionnaires were collected by the instructor.

The identities of all the test subjects were kept anonymous, and participation in the testing was strictly on a volunteer only basis.

Data Analysis

Data analysis consisted of the use of the McNemar Test (Conover, 1980), which measures significance of changes. The test is designed to measure agreement through the use of "I disagree" or "I agree" as the only possible responses to the test questions.

A one direction (one-tail) testing procedure was used because the study was designed to increase knowledge as measured by agreement.

Results indicated how many women demonstrated, on the post-test, a change in attitude about drinking alcohol (especially during pregnancy) and the effects of alcohol on pre-born babies.

The results of the testing also measured the significance of any changes in attitude resulting from the eight test questions being presented.

CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

Results of the Study

The results of this study showed that on all but two test items, agreement was perfect on both the pre-tests and the post-tests. The rest of the test questions did not show any statistical significance. The two items where a shift in opinion was observed were questions 3 and 6:

Question 3: Most Fetal Alcohol Syndrome children are mentally retarded.

Question 6: The problems of Fetal Alcohol Syndrome children continue with them as they grow into adults.

Analysis Of The Data

On these two test items, agreement shifted from 1 to 7 and from 5 to 8 respectively, as shown in the

tables below. The McNemar Test for significance for changes (Conover, 1980) was applied to these two items.

Since the study was designed to increase knowledge as measured by agreement with the seven questions, a one directional test was performed.

The McNemar Test was significant for question 3: $p = 0.0156$, but not for question 6: $p = 0.1250$.

Figure 4-1

(Pre-test and post-test results for questions 3 & 6)

Question 3	Disagree Post	Agree Post	
Disagree Pre	1	6	7
Agree Pre	0	1	1
	1	7	8

Question 6	Disagree Post	Agree Post	
Disagree Pre	0	3	3
Agree Pre	0	5	5
	0	8	8

Research Question Guiding The Study

The research question that guided this study was whether education about Fetal Alcohol Syndrome would change attitudes about drinking alcohol among Indian women in a treatment center for alcohol abuse.

The data reported above shows the significance of changes resulting from educational material relating to the effects of alcohol on pre-born babies.

Discussion Relating To The Data

When a statistical test is performed on a small data set such as the one obtained from this study, the response of each subject becomes critical. The test for question 6 was not significant even though all those who disagreed at the first changed their opinion. If instead of having 3 people who disagreed at first and then all changed their opinion, if there had been 4 people, the test would have been significant ($p=0.0625$).

Since the McNemar Test is based on the binomial distribution, it is discrete, the probability associated with 4 people changing is closer to the traditional level of significance ($\alpha=0.05$) than that obtained for 5 people changing ($p=0.0313$).

Discussion of the Follow-up Survey

It is worth considering the possibility that the physical manifestations of alcohol on pre-born babies and Fetal Alcohol syndrome are more easily accepted by women who drink alcohol as opposed to the long-term emotional or mental effects on a child.

With this line of reasoning, a follow-up

questionnaire was given to a group of women from the same rehabilitation facility where the original master's project study was conducted to determine if there was indeed a need for more education in this area.

The follow-up survey consisted of eleven questions which related to mental retardation versus physical disabilities and how those issues are perceived by the survey subjects (see Appendix B).

Due to the small number of subjects (eleven), the results of the follow-up study were not statistically significant. However, the results were still interesting and they demonstrate a possible need for more education about mental retardation as it relates to Fetal Alcohol Syndrome.

A comparison was made between pairs of questionnaire items 2 and 5, 6 and 11 and between 7 and 10.

Questions 2 and 5 were about whether physical problems were perceived to be worse than mental problems. On question 2, six subjects agreed that physical problems are not as bad as mental problems. On question 5, nine subjects disagreed and two did not answer the question which stated that mental problems are not as bad as physical problems.

Therefore, the majority of the subjects agreed that mental problems are worse than physical problems (on question 2), and an even larger majority of subjects

(nine) agreed that mental problems are worse than physical problems (question 5).

On question 6, nine subjects disagreed that mentally retarded children have an easier time in life than a child who has physical problems, while 2 did not respond to the question at all. On question 11, only three agreed that it would be worse to have a mentally retarded child than a child that has physical problems.

Therefore, the majority of subjects agreed that mentally retarded children have a harder time in life (question 6), but only three of the subjects agreed that it would be worse to have a mentally retarded child (question 11). This could possibly mean that the subjects feel that it would be harder to care for a child with physical problems, and the stigma of having a child with physical problems (which might be more observable) might be perceived as worse than having a mentally retarded child (whose problems might be less observable).

For question 7, six subjects agreed that children who are mentally retarded continue to be mentally retarded as they grow into adults, with three disagreeing. This shows that most of the subjects feel that mental retardation is permanent and not susceptible to change or lessening.

Question 10 results showed that ten subjects agreed that Fetal Alcohol Syndrome is always caused by a mother

who drank alcohol while she was pregnant, with one subject disagreeing. It is suggested from the survey results, that the majority of these particular subjects felt that Fetal Alcohol Syndrome has a definite cause: a mother who drank alcohol while she was pregnant.

Follow-up Survey Statistical Analysis

Using the Cross Tabs Procedure of the SPSS (Statistical Package for the Social Sciences) program, the Pearson Chi-square and the Fisher's Exact Test did not indicate any significant statistical relationship between any of the pairs of questions.

These tests were designed to show any relationship between the questions and predict how people who tended to agree on one question might disagree on another question.

As was previously mentioned, there was no significant statistical relationship evidenced by the tests, yet it might be argued from the individual manner in which each question was answered that there is a need for further inquiry about how mental retardation from Fetal Alcohol Syndrome is perceived among this particular population (Indian women in a treatment center for alcohol abuse).

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The effects of Fetal Alcohol Syndrome are being felt by communities throughout the United States, but perhaps most strongly among the American Indian population.

In an effort to help alleviate this problem among the Indian population, the question of whether education about the effects of alcohol on pre-born babies would affect attitudes about drinking alcohol among Indian women in a treatment center for alcohol abuse was considered worthy of further inquiry.

This inquiry led to the literature review which consisted of material from diverse sources such as The U.S. Department of Health and Human Services, The National Clearinghouse for Alcohol and Drug Information, journal articles from major universities, diverse texts relating to attention deficit disorder, hyperactivity, alcoholism and the effects of learning on attitudinal change.

Methodology was of a descriptive study design, chosen because of the limited accessibility to large samples from the population to be studied and the lack of a control group.

The test instrument was designed by the researcher because no standardized test was available which would be useful for the unique population of Indian women in a treatment center for alcohol abuse in the Phoenix, Arizona area which also measures attitudes about FAS.

Face validity was the criterion to determine validity for the test, and reliability could not be determined because of limited available testing or re-testing times.

The findings showed that there was significance for only one question, question 3 ($p=0.0156$), but that a shift in opinion was observed on both question 3 and question 6, using the McNemar Test (Conover, 1980).

Conclusions

The conclusions of the findings of the study are interesting because they suggest a need for education in those areas of Fetal Alcohol Syndrome that were not first agreed upon in the pre-test.

Even though question 6 did not show significance, it would have been significant if only one other person had showed a change in attitude. It is important to also

note that one test subject showed resentment to information about the two test questions which related to mental retardation and the fact that the problems of Fetal Alcohol Syndrome continue into adulthood for FAS affected children. This one person alone could have affected test results by having a prejudicial attitude toward the two test questions and reacting on an emotional basis alone.

Another interesting finding was that there was so much agreement on the pre-test (excepting questions 3 and 6), suggesting prior information about the effects of Fetal Alcohol Syndrome.

That assumption also implies that the switch on the post-test was due to information received during the educational session following the pre-test, and that the topics covered in questions 3 and 6 were probably not presented previously, or that they had been presented in a manner that did not lead to understanding of those topics.

As was mentioned earlier in this study, question 3 related to the fact that most Fetal Alcohol Syndrome children are mentally retarded, and question 6 addressed the issue that Fetal Alcohol Syndrome childrens' problems continue into adulthood.

All the other test items relate to physical problems resulting from Fetal Alcohol Syndrome or information

about the effects of alcohol on the mother.

Examples of the original pre- and post-test questionnaires as well as an example of the follow-up survey can be found in Appendix A and Appendix B.

It can be argued from the results of the follow-up survey which was discussed in Chapter 4, that mental retardation that is caused by Fetal Alcohol Syndrome is perceived to be the fault of the mother who drank alcohol while she was pregnant. It might also be argued that there might be some guilt on the part of women who are in a treatment center for alcohol abuse because they might have been the cause of FAS in previous children, or are the possible causes of FAS in their future children if they choose to continue drinking alcohol.

In addition, the follow-up data suggests that the majority of Indian women in this particular treatment facility feel that mental problems are worse than physical problems, that mentally retarded children have a harder time in life than children who have physical problems, that it would be worse to have a child with physical problems than a child with mental problems, and that mental retardation which results from Fetal Alcohol Syndrome is caused by the mother who drank alcohol while she was pregnant.

It is interesting that the dichotomy exists between the majority of the subjects' views that mental problems

are worse, that mentally retarded children have a harder time in life, but that it would be worse to have a child with physical problems.

Could it also be possible that having a child with mental problems does not have the same stigma attached as having a child with physical problems (the view of these subjects only)?

There are some interesting observations which resulted from this survey that definitely deserves more research which might clarify which area of education and prevention needs to be addressed that might lead to a lowering of the incidence of alcohol abuse in this population.

Recommendations

General Recommendations

It is suggested from the data that education about the effects of alcohol on pre-born babies does affect attitude change, even though only one test item showed any true significance.

It is also suggested from the results that either the test subjects had never been exposed to the material covered in questions 3 and 6, or that they had held previous disagreements concerning the information they had received about mental retardation and the long-term

effects of Fetal Alcohol Syndrome on an affected child.

Therefore, it is recommended that programs be designed that provide information regarding the effects of drinking alcohol while a woman is pregnant. The program should emphasize that drinking alcohol while a woman is pregnant exposes the pre-born child to the possible risks of physical abnormalities such as heart defects, facial deformities and behavioral problems. A major emphasis should be placed on education about the risk of mental retardation caused by Fetal Alcohol Syndrome since this topic elicited strong responses from the test subjects.

Recommendations For Future Research

After analyzing the results of the original study and the follow-up survey, it seems important to determine if more information about the effects of mental retardation and the long-term effects of Fetal Alcohol Syndrome would change attitudes about drinking alcohol among Indian women in a treatment center for alcohol abuse.

If it turns out that attitudes can indeed be changed in those areas, then it might also hold true that a resulting change in behavior, not drinking alcohol while pregnant, might occur as well.

Further research of this nature would be most

productive if longitudinal studies could be carried out with subjects who had received information about the possibilities of mental retardation in children and long-term effects on children as a result of mothers who drink alcohol while pregnant.

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APPENDIX A

FETAL ALCOHOL SYNDROME QUESTIONNAIRE (original test)

APPENDIX A: Fetal Alcohol Syndrome Questionnaire
(original test)

This questionnaire is to help determine whether information about drinking alcohol and its effects on unborn babies helps to change attitudes about drinking.

Instructions: Please circle the answer that describes how you feel about the answer to the question.

1. Whenever a pregnant woman drinks alcohol, the alcohol enters the baby's bloodstream.

I agree

I disagree

2. Fetal Alcohol Syndrome babies have smaller heads, heart defects, abnormal joints and poor coordination.

I agree

I disagree

3. Most Fetal Alcohol Syndrome children are mentally retarded.

I agree

I disagree

4. Pregnant women who drink one to two drinks each day are twice as likely to have a low birth weight baby.

I agree

I disagree

5. Alcohol is a powerful and addictive drug.

I agree

I disagree

6. The problems of Fetal Alcohol Syndrome children continue with them as they grow into adults.

I agree

I disagree

7. If a pregnant woman does not drink alcohol during her pregnancy, she will not have a Fetal Alcohol Syndrome affected baby.

I agree

I disagree

-Thank You For Your Help-

APPENDIX B

OPINION SURVEY (follow-up test)

APPENDIX B: Opinion Survey (Follow-Up)

This survey will be helpful in finding out how to plan education about subjects that are important for the Native American community. Thank you for your help.
Please circle the answer below that describes how you feel.

1. Most physical problems that children are born with can be helped or corrected with an operation or medicine.
(physical problems are anything that happens to the body).

I agree

I disagree

2. Physical problems (problems that happen to the body), are not as bad as mental problems.

I agree

I disagree

3. A child that has physical problems at birth can have a better life than a child that has mental problems at birth.

I agree

I disagree

4. Children who have physical problems do not have a chance to get well.

I agree

I disagree

5. Mental problems are not as bad as physical problems.

I agree

I disagree

6. Mentally retarded children have an easier time in life than children who have physical problems.

I agree

I disagree

7. Children who are mentally retarded continue to be mentally retarded as they grow into adults.

I agree

I disagree

8. Children who have mental problems do not have a chance to get well.

I agree

I disagree

9. Most Fetal Alcohol Syndrome children are mentally retarded.

I agree

I disagree

10. Fetal Alcohol Syndrome is always caused by the mother who drank alcohol while she was pregnant.

I agree

I disagree

11. It would be worse to have a mentally retarded child than to have a child that has physical problems.

I agree

I disagree

BIOGRAPHICAL SKETCH

Kelly Michelle Begay received her elementary education in Chicago, Illinois and Madisonville, Kentucky. She attended the University of Alaska, Indiana State University and Arizona State University before receiving the Bachelor of Arts Degree in Psychology in the Spring of 1991, from Ottawa University in Phoenix, Arizona. Kelly moved to Phoenix, Arizona in the fall of 1978 where she continues to work within the Indian community as a counselor, teacher and volunteer in the Indian program of Parents Anonymous. She is a member of the Arizona Counselors Association, the Arizona Mental Health Counselors Association, the Association for Advancement of Behavior Therapy and the Milton Erickson Foundation for Hypnotherapy.