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Cynthia D. Beckett
San Jose State University

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Beckett, Cynthia Diane, M.S.

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U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

DESCRIPTION OF NEONATAL OUTCOMES IN SUBSTANCE ABUSING WOMEN

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Cynthia D. Beckett

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APPROVED FOR THE DEPARTMENT OF NURSING

Coleen Saylor, Ph.D., R.N.

Joan Edelstein, Dr.P.H., R.N.

Judith Snyder, M.S., R.N.

APPROVED FOR THE UNIVERSITY

ABSTRACT

DESCRIPTION OF NEONATAL OUTCOMES IN
SUBSTANCE ABUSING WOMEN

by Cynthia D. Beckett

The growing use of drugs and alcohol during pregnancy is alarming. Drug-specific education programs may discourage childbearing women from using drugs and may improve the future for their children and families. This thesis describes one perinatal drug abuse program and its outcomes as measured by: participation rates, amount of drug usage, gestation when entering the program, and birth data. The data were collected from client files in a computer data base.

The data describe a sample of 36 mothers, predominantly Hispanic, who used a variety of drugs. Of these women, 26 had delivered their infants. The overall birth outcomes from this study were generally positive. Negative toxicology screens were present in 9 of 12 infants. Only 9 infants had complications at delivery, or within the first 2 weeks of life. Studies are inadequate in the areas of treatment programs and their long-term outcomes. Knowledge is essential to meet and overcome this challenge.

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Chapter 1

INTRODUCTION

Drug-specific education programs are designed to discourage childbearing women from using drugs and improve the future for their children and families. This is a critical priority for health care and education. This study focuses on one perinatal drug abuse program. A description of the program's outcomes in promoting abstinence from drug and alcohol use during pregnancy is provided. Outcome is assessed from the participation rates of the clients, amount of drug usage during the program, gestation when entering the program, and birth data of those infants whose mothers have participated in the program. The birth data includes: birth weight, birth length, head circumference, gestational age at delivery, 1 and 5 minute APGAR scores, results of toxicology screening, postnatal hospital days related to withdrawal or illness, congenital malformations, and fetal/infant death.

Background

Drug Effects

In 1985, the National Institute on Drug Abuse estimated that there were between 15,520,000 and 17,400,000 female illicit drug users in the United States 84% of whom were childbearing age (Torrence & Horns, 1989). Drug abuse among pregnant women is increasing at an alarming rate. The devastating effects on the fetus and neonate foretell critical long-term physical and psychosocial health care problems

(Moran, 1990). The physical effects may be successfully treated, but psychosocial or behavioral effects may not be overcome.

The problem of perinatal drug use is complex, encompassing social, economic, cultural, religious, and age related issues (Moran, 1990). Teratogenic effects are noted from drug use in pregnancy; the severity of effects is determined by type of substance, trimester of pregnancy, frequency of use, and amount of substance used (Hoyme et al., 1990). A recent study that screened all labor admissions at the University of California at Davis demonstrated a 22% positive toxicology screen for illicit drugs (Connor, 1989).

Treatment Programs

As recently as fifteen years ago, alcoholism and drug abuse was viewed as a man's disease. It has only been in the last few years that increasing attention and concern has been given to women's substance use and abuse. National surveys indicate that women underutilize substance abuse treatment programs with three primary barriers hindering their efforts to seek treatment: stigma attached to "using," denial due to shame and guilt, and lack of gender-specific treatment services for women (Finkelstein, 1990). Most treatment programs do not treat medical complications of pregnancy; therefore pregnant abusers are not accepted (Sproat, 1990).

Drug treatment programs which are defined as being women-oriented are those that:

> (a) address women's treatment needs; (b) reduce barriers to recovery from drug dependence that are more likely to occur for women; (c) are delivered in a context that is compatible with women's styles and orientations and is safe from exploitation; and (d) take into account women's roles, socialization and relative status within the larger culture. (Reed, 1987, p. 151)

Women vary in their age, race, socioeconomic status, lifestyle and choice of drugs, but they often have similar needs during treatment and follow-up (Reed, 1987).

The number of prevention and treatment programs for women is slowly increasing in the United States. The Office for Substance Abuse Prevention (OSAP) in conjunction with the Maternal and Child Health Bureau (MCHB) have awarded federal grants to 135 agencies across the United States to develop and implement perinatal specific substance abuse programs to meet the needs of the childbearing population (ages 15-44) (OSAP, 1992).

Identifying substance-abusing women for treatment is the first step in these programs. Specific characteristics have been identified by Chasnoff (1987) and Levy and Koren (1990). These women may have a positive history for pancreatitis, pneumonia, hepatitis, bacterial endocarditis, cirrhosis, acquired immunodeficiency syndrome, cellulitis, or a history

of substance abuse. They may present with a look of physical exhaustion, extremely dilated or constricted pupils, noticeable track marks, abscesses, edema of extremities, inflamed or indurated nasal mucosae, and/or a state of disorientation to time and place. Past obstetrical history may include: abruptio placenta, fetal death, low birthweight infant (intrauterine growth retardation-IUGR), meconium staining, premature labor, premature rupture of membranes, sexually transmitted diseases, and spontaneous abortion. In the current pregnancy, there may be history or evidence of: IUGR, preterm labor, abruptio placenta, weight loss, inactive or hyperactive fetus, sexually transmitted disease, spotting or vaginal bleeding, and substance abuse in pregnancy with positive toxicology screen.

Research has shown that pregnant substance-abusers will receive inadequate or no prenatal care for fear of social and legal interventions. These women fear criminal prosecution and the removal of their children by child protective services if they agree to toxicology screens and participation in substance abuse treatment programs. Therefore, strict confidentiality must be maintained for them to continue in these programs (Jack, Davis, Culpepper, & Hunt, 1990).

Drug dependence treatment services need to be women-sensitive, helping them not only during the pregnancy but throughout their lives. Programs need to offer medical/health services and child related care. They need to

include education on parenting and chemical dependency, community referrals for parenting support, and family services for coping and counseling. Other services needed are vocational support and training; skill training to develop self-esteem, and coping; counseling for intimacy, sexuality, and support; and resources for legal assistance. Treatment programs focus not only on the womens' addiction, but also the environment and support systems for themselves and their children (Reed, 1987).

Outcomes of Affected Children

VanBarr, Fluery, Soepatmi et al. (1989) and VanBarr, Fleury, and Ultee (1989) present data which fails to demonstrate the effectiveness of treatment programs on the long-term drug effects of these infants. Schneider and Chasnoff (1987) state that with special programs some affected children can grow up functionally normal. However, Cohen (1990) remarks that there is no known treatment to cure the damage of cocaine and other illicit drugs; the future may be bleak for children of substance abusing women.

The long-term outcomes for these children will depend on cumulative drug effects, initial bonding with mother or caregiver, and home environmental influences during the years from birth to school age (Torrence & Horns, 1989). Special comfort measures are needed for these infants: quiet, controlled environment, minimal gentle handling, swaddling,

dim lights, special skin care, demand feedings, and limited stimulation (Miller-Karas & Quaintance, 1990).

These difficult infants do not respond to caregiving attempts in ways that reinforce nurturing because they do not relate well to the human face and voice. As a result, distant and "cold mothering" may lead to an irritable, colicky infant, which adds to the problems of mother-infant bonding (Escomila-Mondenero, 1977). Education is needed to enhance parenting of these special children. It should be addressed to mothers or caregivers, as well as staff nurses, doctors, social workers, and counselors who have contact with affected children (Miller-Karas & Quaintance, 1990). Substance abuse undermines the normal patterns of interaction between infant and mother and alters conventional priorities in parenting. Clinical services must address the interactive problems between the substance abusing women and their children (Howard, Beckwith, Rodnig, & Kropenske, 1989).

The foster care system is unable to handle the increasing numbers of special children; there is literally nowhere for them to be placed (Jessup & Roth, 1988). Our society must find a solution to this devastating dilemma of the 1990s.

Problem Statement

There is a nation-wide increase of drug abuse among women of childbearing age. Cocaine may be the most devastating drug abused by this population. Continued cocaine use in pregnancy increases the fetal and neonatal risk of physical

and psychosocial damage. The problem of perinatal substance abuse is widespread and crosses social, economic, cultural, and age boundaries (Moran, 1990). The devastating and irreversible psychosocial damage may only be minimally treatable (VanBarr, Fleury, Soepatmi et al., 1989). Therefore, preventing the use of drugs in pregnancy should be an immediate priority in education and health care. Drug-specific prenatal education must be effective and available to all women of childbearing age (Finkelstein, 1990).

Developing and implementing a program which produces a positive outcome for the children of pregnant abusers is very important. Such perinatal specific programs are new and, to date, there have been few formal results published as to their effectiveness. Finkelstein (1990) and Reed (1987) present recommendations in program formulation and content. The problem of prenatal substance abuse is complex; most abusers are poly-drug users, which increases the effects on the fetus in utero and the long-term development of the child (Little, Snell, Klein, & Gilstrap, 1989). The goal is to develop an effective program which will stop the pregnant abusers from using drugs during their pregnancy and for the rest of their life. Increasing knowledge of effective and satisfactory perinatal substance abuse programs is essential.

Research Question

The research question was: What are the perinatal birth data, the drug usage patterns, and the program participation rates of clients in a perinatal substance abuse program?

Purpose

The purpose of this study was to examine perinatal drug-specific education in hopes of improving fetal and neonatal outcome by stopping or limiting the use of cocaine and other drugs during pregnancy. A drug-specific perinatal education plan was implemented at a county program for substance abusing pregnant clients. The outcome of this educational program has not been studied.

Definition of Terms

For the purpose of this study, the following terms were used.

1. Fetal pertains to the developing young in the uterus, from seven or eight weeks after fertilization until birth (Miller & Keane, 1987).

2. Neonatal or newborn describes the period from the time of birth until the 29th day of life (Miller & Keane, 1987).

3. Neonatal Abstinence Syndrome is the process the newborn goes through to withdraw from drugs or alcohol that the mother has been taking. The withdrawal process begins within 24-72 hours after delivery with most drugs (Finnigan, 1982).

4. Drug effects are documented physical anomalies and/or central nervous system symptoms, such as: irritability, tremors, seizures, high-pitched cry, hypertonicity, state disorganization, hyperactivity, hyperreflexia, hyperacusia,

wakefulness, tachypnea, and temperature instability (Finnigan, 1982).

5. Drug abuse is the excessive self-administration of chemicals to change the user's perception of her status (Moran, 1990).

6. Drug addiction is the state of periodic or chronic intoxication produced by the repeated consumption of a drug characterized by: (a) an overwhelming desire or need (compulsive) to continue use of the drug and to obtain it by any means, (b) a tendency to increase the dosage, (c) a psychological and usually a physical dependence on its effects, and (d) a detrimental effect on the individual and/or society (Moran, 1990).

7. Dependence is the psycho-physical state of an addict in which the usual or increasing doses of the drug are required to prevent the onset of withdrawal symptoms (Moran, 1990).

8. Withdrawal is a pathological retreat from external reality and abstention from drugs to which one is habituated or addicted (Moran, 1990).

9. Abstinence is a refraining from the use of or indulgence in food, drugs or chemical substances, or sexual intercourse (Moran, 1990).

Summary

Sullivan (1990) recommended six goals for obstetrical cocaine abusing women:

> identification of drug use, education about cocaine and drug effects, referral for treatment, support of treatment efforts, prevention or identification of obstetrical complication caused by cocaine or drug use, and promotion of appropriate parenting of the cocaine, or drug, exposed newborn. (p.17)

Damage from drug use can be minimized if women stop using during their pregnancy (Kennard, 1990). In establishing methodologies for early identification and protocols for intervention and referral, the nurse can then assist not only cocaine or drug addicted women, but also their infants and families to live healthier, happier, and more productive lives. Therefore, increasing knowledge of effective perinatal substance abuse programs is essential.

Chapter 2

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

Conceptual Framework

The Roy Adaptation Model, developed by Sister Callista Roy (Roy, 1984), provides the conceptual framework for this research. This model is relevant to the need to adapt one's coping and living pattern, as drug using mothers often try to do. This model is primarily a systems model, which contains interactionist levels of analysis (Riehl-Sisca, 1989). According to the model, each person possesses four subsystems: physiological needs, self-concept, role function, and interdependence. It is self-concept and role function which are seen as developing in an interactionist framework (Riehl-Sisca, 1989).

There are eight assumptions of the Adaptation Model:

1. The person is a biopsychosocial being.
2. The person is in constant interaction with a changing environment.
3. To cope with a changing world, the person uses both innate and acquired mechanisms, which are biological, psychological, and sociological in origin.
4. Health and illness are one inevitable dimension of the person's life.
5. To respond positively to environmental changes, the person must adapt.
6. The person's adaptation is a function of the stimulus

he is exposed to and his adaptation level.

7. The person's adaptation level is such that it comprises a zone indicating the range of stimulation that will lead to a positive response.

8. The person is conceptualized as having four modes of adaptation: physiological needs, self-concept, role function, and interdependence relations. (Marriner-Tomey, 1989, p. 336)

Concepts of Roy's Adaptation Model as applied to the drug abusing childbearing population are person, health, environment, and nursing. The person is viewed "as a living, open, adaptive system that exchanges energy and matter with the environment" (Fitzpatrick & Whall, 1989, p. 188). The person is described as having inputs, outputs, control, and feedback processes which encompass the person holistically. Roy developed sets of propositions related to three of the adaptive modes--self-concept, interdependence, and role function. These help link together each adaptive mode. The complex relationships among the adaptive modes reflect the integrated, holistic nature of the person (Fitzpatrick & Whall, 1989). The person or the adaptive system (family, social organization, and community) is the client at the perinatal drug program and her support system (Riehl-Sisca, 1989).

Roy defines health as "a state and process of being an integrated and whole person" (Fitzpatrick & Whall, 1989, p. 28). The concept of health is closely related to the concept

of adaptation; the promotion of adaptation leads to higher levels of well-being and health (Fitzpatrick & Whall, 1989). Health is defined as a positive outcome for the woman and her neonate within the perinatal drug program (Riehl-Sisca, 1989).

Environment is the world around and within a person. It is the internal and external stimuli, or input, for the person in the adaptive system (Fitzpatrick & Whall, 1989). All of the conditions, circumstances, and surrounding influences that affect the development and behavior of a person or group are defined as environment (Riehl-Sisca, 1989). Within the perinatal drug program the environment includes home, community, support system, health care providers, legal resources, and participation within the program.

Nursing is defined by Roy "as being a science and practice discipline; a body of knowledge used to positively affect a person's health status" (Riehl-Sisca, 1989, p. 117). Roy defined nursing as "the science and practice of promoting adaptation for the purpose of affecting health positively" (Fitzpatrick & Whall, 1989, p. 186). Nursing within the perinatal drug program involves the day to day management of clients health care issues.

Roy has been applied to many areas of practice. Hanchett (1990) utilized the model in the community setting. Roy's model allows for community to be a system. Community health can be viewed as a state or condition, and community process as adaptation towards integration and wholeness of the

community. The effectiveness or ineffectiveness of responses demonstrates how well the community adapts when its integrity is threatened. The public health or community health nurse would work with the community groups, clinics, and prevention programs to increase their coping skills to better enable them to deal with group problems or problems which pertain to individuals within the group (Hanchett, 1990).

Fawcett (1990) used the Roy Adaptation Model to develop a program of nursing intervention for the preparation of women for Cesarean childbirth. Nursing interventions for coping with stress and mothers' depression were developed based on Roy's model by Peddicord (1991) and Bawden, Ralph, and Herrick (1990).

Adaptation and coping are skills which substance abusers need to learn and to utilize effectively. Roy's model can be applied to the perinatal drug program at all levels of the nursing process.

Review of Literature

In analyzing the perinatal population's drug of choice and history of use, it was found that cocaine, alcohol, heroin or methadone, and marijuana were the most frequently abused substances. These women were poly-drug users and had histories of nicotine and caffeine use, which can increase the harmful effects of the other drugs (K. West, personal communication, July 1, 1992). A comparative summary of physical effects and developmental or behavioral effects will

be discussed for the following mood altering substances: cocaine, alcohol, heroin or methadone, and marijuana.

Drug Effects

Cocaine

The risks of cocaine on the developing fetus are only partially known. Cocaine babies can possess a multitude of teratogenic effects (Hoyme et al., 1990). An increased perinatal morbidity and mortality rate has been associated with use of cocaine in pregnancy. Interference occurs both with the physical and psychosocial development of the fetus and neonate. Cocaine induces a vasoconstrictive action which results in vasoconstriction of the placental vessels, thus decreasing blood supply (oxygen and nutrients) to the fetus (Flandermeyer, 1987). Infarctions to developing organ systems may result. The degree of damage is determined by when and where the infarct occurs (Kennard, 1990).

First trimester cocaine use may increase the risk of spontaneous abortions by 38% (Janke, 1990). Congenital anomalies, which include skeletal malformations, cardiac anomalies, genitourinary tract abnormalities, and gastrointestinal abnormalities, are often diagnosed (Hoyme et al., 1990; Janke, 1990; Kennard, 1990; and Roland & Volpe, 1989). Cocaine is potentially more hazardous in pregnancy than any other illicit drug (Lynch & McKeon, 1990).

Later in pregnancy, during the second and third trimesters, the hypertensive effects elicited predispose the

woman to placenta abruptio, preterm labor, and an increase in stillbirths (Janke, 1990). The fetus suffers from vascular disruption with each insult; the more cocaine used, the greater the damage (Hoyme et al., 1990).

The physical effects are readily diagnosed. However, the psychosocial, or behavioral, effects may manifest slowly as the child develops. The full magnitude of harm may not be realized for many years (Kennard, 1990). The most commonly recognized behavioral effects are: irritability, tremors, poor feeding, frantic fist sucking, abnormal sleep patterns, sneezing, yawning, high pitch crying, increased startles, state disorganization, state liability, poor visual processing, decreased spontaneous activity, dull alert periods, difficulty with consoling, and difficulty with bonding. Also noted are: impulsivity, disinhibition, repetitive actions and extreme psychomotor activation, lack of organizational skills, memory loss, "angry" emotional outbursts and actions with no signs of remorse being shown by the child, and minimal to no eye contact with caregiver during attempted communication (Chasnoff, Burns, Schnoll, & Burns, 1985; Hopkins, 1990; Howard, 1989; Kennard, 1990; Lewis, Bennett, & Schmeder, 1989; Roland & Volpe, 1989; and Schneider & Chasnoff, 1987). Cocaine blocks out the pleasure pathways in the brain of the developing fetus; the children are oblivious to any affection and many dislike being held (Hopkins, 1990). These behaviors do not greatly improve with education or love (Sproat, 1990).

Due to the difficulties affected children experience, an increase in documented child abuse is being reported. There needs to be extensive parenting education and support to assist parents in coping with these special children (Hopkins, 1990).

Studies by Cordero and Custard (1990) and Bauchner et al. (1988) describe the relationship between perinatal cocaine use and the incidence of Sudden Infant Death Syndrome (SIDS). The general population of infants has a SIDS rate of 0.5%; statistics indicate an increased SIDS rate of 4-17% for those infants exposed to intrauterine cocaine (Roland & Volpe, 1989). Further studies are needed for data follow-up and verification.

Alcohol

Fetal Alcohol Syndrome (FAS) is estimated to occur in one out of three cases per 1000 births, approximately 4,000 to 12,000 cases annually in the United States. FAS is preventable and is known to cause mental retardation (Sproat, 1990).

Alcohol is easily accessible and inexpensive to purchase. Fetal effects are noted throughout the pregnancy resulting in infants with FAS or Fetal Alcohol Effects (FAE): spontaneous abortion, IUGR, microcephaly, stillbirth, joint and facial anomalies, genitourinary anomalies, cardiac anomalies, central nervous system (CNS) impairment, skeletal and muscular anomalies, ocular problems, and hemangiomas (Cohen, 1990; Jessup & Green, 1987; and Moran, 1990). In labor, acute

withdrawal may occur and transient muscular hypotonia may be noted (Bushong, 1989).

Neonatal effects of alcohol are acute withdrawal with sedation, seizures, and poor feeding. Symptoms present within the first 24-48 hours after delivery include: extremely irritable, opisthotonus (an arching of the back from muscular spasms), and noted abdominal distension without diarrhea (Cohen, 1990).

Developmental/behavioral effects may not be fully identified until the child is older. Developmental delay, hyperactivity, and low IQ, (mean of 65 as an adult), are commonly noted (Bushong, 1989). The estimated cost for maintaining one individual with FAS from birth to 65 years of age is $400,000 (Jessup & Roth, 1988).

Heroin/Methadone

There has been a resurgence of heroin use in the United States in the 1990's. Three hundred thousand women are addicted, with 10,000 deliveries of exposed newborns annually (Moran, 1990).

The fetal effects of heroin (opioid) are apparent throughout the pregnancy. According to Dixon (1989), neither heroin nor methadone is known to cause an increase in structural defects in children. In contrast, Bushong (1989) states that opioids may be associated with infants who are small for gestational age, premature, microcephalic, and hyperactive. Fetal compromise and stillbirth are associated

with maternal withdrawal during pregnancy (Report of the Expert Advisory Committee on the use of drugs in the treatment of abuse and dependence to narcotic and controlled drugs, 1990). Methadone use in pregnancy may promote fetal growth after use of heroin, due to the regulation of a constant drug level, prenatal care (required with methadone programs), and improved maternal nutrition (Finnegan, 1982).

The greatest neonatal effect is withdrawal, or Neonatal Abstinence Syndrome (Dixon, 1989; Finnegan, 1982). Symptoms of neonatal drug withdrawal include: wakefulness, irritability, tremulousness, temperature variation, tachypnea, hyperactivity, high-pitched crying, hyperacusia, hyperreflexia, hypertonus, diarrhea, diaphoresis, rub marks, disorganized suck, respiratory distress, rhinorrhea, apneic attacks, autonomic dysfunction, weight loss or failure to gain weight, alkalosis (respiratory), and lacrimation (Cohen, 1990; Finnegan, 1982).

Documented long-term developmental/behavioral effects of opioid-exposed infants are poor growth, a 5%-10% increased occurrence of SIDS, and intellectual delay. Affected children may have learning disabilities associated with hyperactivity and developmental delay (Cohen, 1990). Special outreach and follow-up programs may be needed to facilitate the optimal development of these infants (Kaye, Elkind, Goldberg, & Tytun, 1989).

Marijuana

Marijuana (cannabinoid) exerts effects on virtually all biological systems (Hutchings, 1990). Prior to conception, chromosome changes can occur in the egg and sperm. Decreased sperm counts have been documented (Briggs, Freeman, & Yaffe, 1990; and Bushong, 1989). Maternal undernutrition and dehydration may result in infants that are small for gestational age. Bleeding disorders at delivery have also been documented, resulting in potential risks to the infant (Hutchings, 1990).

Neonatal effects are identified as sedation, habituation, tremors, high-pitched cry, and irritability (Bushong, 1989; Hutchings, 1990). Symptoms of marijuana exposure resolve in most infants by 30 days of age (Brigg, Freeman, & Yaffe, 1990).

Marijuana appears to produce developmental delays followed by periods of "catch up," but no long-term neurobehavioral effects that persist to adulthood (Hutchings, 1990). More research is needed for confirmation of the long-term effects of marijuana.

Treatment Programs

Developing effective programs for this population necessitates identifying and meeting their personal needs. Lone (1991) studied prenatal substance abusing women and established guidelines to assist in assessing them. In order to meet the needs of the woman the interviewer should:

1. Address her current needs and stresses.

2. Listen and show more interest in the woman's problem than in completing paper work.

3. Try to provide continuity in her primary contact person.

4. Set priorities for each visit.

5. Be accessible and accommodate her whenever she appears.

6. Provide child care as needed.

7. Always give the client feedback about her condition to reinforce her focus on the present.

8. Refer her to services outside the program as seldom as possible.

9. Be flexible in setting up and sustaining a continuum of contact and care.

Chavkin, Allen, and Oberman (1991) presented a discussion about substance abuse, pregnancy, public policy, clinical management, maternal rights, and fetal rights. In this published panel discussion Chavkin stated, "society has responded to the problem of maternal drug use in three different ways: criminal prosecution of the mother, allegations of child neglect against the mother with interruption of maternal custody, and drug treatment" (p. 108). Because of the first two items listed, many women are afraid to participate in programs for fear of litigation against them. In the same article, Allen encouraged health care providers to

carefully screen the women, identify the problem with them, and connect them into a drug treatment program. Further, Allen emphasizes the importance of prenatal care. By coming for prenatal care, the woman is attempting to do what is right, even if she refuses drug treatment or continues her drug use. There are very limited drug treatment programs which provide drug treatment to the pregnant abuser.

The legal issues which surround pregnant abusers are unclear and inconsistent from state to state. There is an ethical and legal dilemma in dealing with addicted women and their unborn children. Oberman states, "the maternity caregiver owes the pregnant woman two basic duties: to maintain confidentiality of information disclosed by the woman, and to respect her autonomy by soliciting her informed consent to treatment and by honoring her refusal of treatment" (Chavkin, Allen, & Oberman, 1991, p. 110).

The federal government has begun granting funds to set up programs to meet the needs of pregnant addicted women. Subsidized treatment programs are still few and many require separation of the woman from her children. Most existing programs are unable to meet women's needs because they are set up on the male model for drug treatment programs (Chavkin, Allen, & Oberman, 1991).

There have been numerous studies on urban drug use across the country. However, few focus on drug use in the rural community (Lindenberg et al., 1991; and Sloan, Gay, Snyder, &

Bales, 1992). From these studies, characteristics have been compiled and programs have been developed. A review of literature revealed no published reports which evaluate the programs which are specific for pregnant abusers. There is an urgent need for these programs to be evaluated for long-term effects on mothers and their children.

Attention needs to be focused on etiological factors which determine a woman's initial decision to use drugs and/or why she continues to use. "Etiological determinants of drug use are key to developing effective preventive programs" (Lindenberg et al., 1991, p. 74). Treatment programs need to focus holistically on the woman and her environment for them to be effective.

Summary

The growing use of drugs and alcohol during pregnancy is alarming. The long-term effects of these substances upon the fetus and newborn may be devastating. Developing treatment and prevention programs for this population based on Roy's Adaptation Model would allow the client the opportunity to receive prenatal care and support services. More importantly it would allow her to learn healthy ways of coping with stress and dealing with the problems within her family and environment. By assisting addicted women in learning positive adaptive behaviors, long-term "drug free" goals may be more readily attained and better neonatal outcomes may be achieved.

Chapter 3

METHODOLOGY

The study used a descriptive retrospective design to investigate a perinatal substance abuse treatment program. The research question for this study was: What are the perinatal birth data, the drug usage (atterns, and the program participatio(rates of clients in a perinatal substance abuse program? The study variables were: participation rates in the program, amount of drug usage during the program, gestation when entering the program, and perinatal birth data: birth weight, birth length, head circumference, gestational age at delivery, 1 and 5 minute APGAR scores, results of toxicology screening, postnatal hospital days related to withdrawal or illness, congenital malformations, and fetal or neonatal death.

Subjects and Setting

The subjects were clients in a perinatal drug abuse program. Clients were required to participate daily in this outpatient program to maintain active status. There were individual and group counseling sessions and a series of educational classes: parenting, drug, prenatal-childbirth, empowerment, life skills, living sober, and community resources. The program provided child care and transportation to the facility and to necessary appointments. The clients ranged in age from 15 to 38, although the program is designed for anyone in the childbearing years, ages 15-40. At the time

of the study there were 55.6% Hispanic, 36.6% white, and 8.3% African-American clients in the program. The most frequently used drugs were cocaine, heroin or methadone, and alcohol; marijuana and methamphetamines have also been reported. The clients must have been referred into the program and must be less than 28 weeks gestation when starting the program. There were 36 clients. Only those clients who had delivered were included in the study.

Data Collection

The data were collected from client files in a computer data base. The data were formatted in the files with the Addiction Severity Index (Appendix A) and the birth data collection tool (Appendix B). The data were coded so that the participants remained anonymous and entered in a data file for computer analysis. No consents from subjects were needed because they had previously signed consents for release of information for the purpose of program evaluation/research (Appendix C). Consent for the study was received from the agency (Appendix D) and San Jose State University Human Subjects Committee (Appendix E).

Data Analysis

Descriptive statistics were utilized for analysis of the data including frequency distribution, measures of central tendency, and measures of variability. The SPSS/PC data

analysis program was used. In addition, a profile of the subjects was developed.

Limitations

The study was limited by design, sample, setting and data collection method. The study design was limited to descriptive because it would not be ethical to withhold treatment or education to pregnant drug abusers in order to establish control and experimental groups. There were no other programs within the area with which to compare outcomes, and this program has yet to measure outcomes within its clients.

There was a small sample for the study, due to the limited number of clients participating in the program. Generalizations cannot be made to larger populations or populations with different ethnic ratios. Participation in the program, although encouraged, is not mandated. The women were encouraged to be honest in reporting drug use during the program, but the random toxicology screens may not have accurately reflected frequency of use. Documentation of client reported drug use and positive toxicology screens were poor and inconsistent, preventing accurate analysis of this variable. There may well be a proclivity for socially desirable answers.

The data collection tools provided excellent quantitative information, but omitted the open-ended responses as to why

they use and continue to use drugs. Interviews with the clients might have given valuable information as to why the program had positive or negative perinatal outcomes.

Chapter 4

ANALYSIS AND INTERPRETATION OF DATA

This was a descriptive retrospective study looking at the research question: What are the perinatal birth data, the drug usage patterns, and the program participation rates of clients in a perinatal substance abuse program? The following is an analysis of data collected from a computer data base utilizing the Addiction Severity Index and a birth data collection tool. The SPSS/PC data analysis program was used to analyze the data.

Description of Sample

As of June 30, 1992, there were a total of 36 clients participating in this substance abuse program at different levels of involvement (Table 1). There were 6 (16.7%) clients who had completed the program through 6 months postpartum, 5 (13.9%) who were current postpartum, 7 (19.4%) who had completed through delivery, 14 (38.9%) who left prior to delivery, and 4 (11.1%) who were current prenatal clients.

Three ethnic groups were represented within the sample: 13 (36.1%) white, 3 (8.3%) African-Americans, and 20 (55.6%) Hispanic (Table 1). Age categories were established by the program to assist in the evaluation of the clients, as seen in Table 1. The youngest client admitted into the program was 15 and the oldest was 38. This represents a mean age of 26.3 with a standard deviation of 5.5.

Table 1

Maternal Demographics (N = 36)

Value Label	Frequency	Percent
Completed program	6	16.7%
Current postpartum	5	13.9%
Completed thru delivery	7	19.4%
Left before delivery	14	38.9%
Current prenatal	4	11.1%
Hispanic	20	55.6%
White	13	36.1%
African-American	3	8.3%
Age 15-19	5	13.9%
20-24	7	19.4%
25-29	14	38.9%
30-34	8	22.2%
35-39	2	5.6%
Court ordered		
yes	8	22.2%
no	27	75.0%
missing	1	2.8%

Admission into the program fell into two categories: voluntary and court ordered. There were 27 (75.0%) clients who were voluntarily admitted and 8 (22.2%) clients who were court ordered into the program (Table 1). HIV testing was mandatory for all program participants; however, the results were unknown on all 36 clients at the time of data collection.

It was important to ascertain the drug of choice for each client in order to better assist them in recovery. Upon entering the program, clients answered a question in which they self-reported their drug of choice. Table 2 shows that, of the 36 clients, 21 (58.3%) smoke tobacco, 13 (36.1%) do not smoke, and 2 (5.6%) had missing data. Alcohol was listed as the primary drug of choice by 14 (38.9%) and by 8 (22.2%) as secondary drug of choice by clients admitted to the program. Cocaine was listed as the primary drug of choice by 11 (30.6%) and by 12 (33.3%) as the secondary drug of choice. Heroin was listed as the primary drug of choice by 7 (19.4%) and by 6 (16.7%) as the secondary drug of choice. The crack form of cocaine was listed as the primary drug of choice by 3 (8.3%) and by 1 (2.8%) as a secondary drug of choice. Marijuana was listed as drug of choice by 1 (2.8%) and second choice by 4 (11.1%) of the clients (Table 2).

Pregnancy Outcomes

Of the 36 women who were admitted into the program, 26 (72.2%) had delivered their babies. Complete birth data were documented on 11 (42.3%) babies, partial birth data on 8

Table 2

Drug of Choice (N = 36)

Value Label	Frequency	Percent
Smoke	21	58.3%
Do not smoke	13	36.1%
Missing	2	5.6%
First Choice		
Alcohol	14	38.9%
Cocaine	11	30.6%
Heroin	7	19.4%
Crack	3	8.3%
Marijuana	1	2.8%
Polydrug	0	0.0%
Second Choice		
Cocaine	12	33.3%
Alcohol	8	22.2%
Heroin	6	16.7%
Marijuana	4	11.1%
None	4	11.1%
Crack	1	2.8%
Polydrug	0	0.0%
Missing	1	2.8%

(30.8%) babies, and birth data was completely missing on 7 (26.9%) babies. The missing data were due to clients leaving the program prior to delivery and due to inconsistent data collection by the program staff (Table 3). Data on gender were available on 19 babies. There were 8 males and 11 females.

Table 3

Clients Admitted Into the Program (N = 36)

Value Label	Frequency	Percent
Delivered babies	26	72.2%
Complete birth data	11	42.3%
Partial birth data	8	30.8%
Missing birth data	7	26.9%

Gestational Age

Gestational age at delivery was available on 18 babies. Fifteen were delivered at 37-41 weeks (full term), 1 delivered at 42 weeks (post dates), and 2 delivered prior to 37 weeks (pre-term). Of the two pre-term infants, one infant delivered at 34 weeks and 1 at 35 weeks gestation (Table 4). None of these infants suffered major complications due to prematurity. From the entire population of 18, 2 babies were documented to

be small for gestational age and interuterine growth retarded. Four babies were large for gestational age, but these babies were proportionally appropriate, and there were no problems related to their larger than normal size (Table 5).

Table 4

Weeks at Delivery (N = 26)

Weeks of Gestation	Frequency	Percent
34	1	3.8%
35	1	3.8%
36	0	0.0%
37	1	3.8%
38	4	15.4%
39	4	15.4%
40	4	15.4%
41	2	7.8%
42	1	3.8%
Missing data	8	30.8%

Birth Data

Data on birth weight were documented on 18 babies and the weights were found to be within normal ranges using the Department of Health, Education, and Welfare growth charts for

Table 5

Gestational Age (N = 26)

Value Label	Frequency	Percent
Small for gestational age (SGA)	2	7.8%
Average for gestational age (AGA)	12	46.0%
Large for gestational age (LGA)	4	15.4%
Missing data	8	30.8%

boys and girls birth to 36 months. The mean weight was 3232 grams with a standard deviation of 479.2 grams. The largest infant weighed 4167 grams, and the smallest infant weighed 2296 grams. Length was documented on 18 infants and was found to range from 45 to 53 centimeters with the mean of 48.1 and a standard deviation of 2.4. Data on head circumference were documented on 16 infants. The smallest head circumference was 32 centimeters and the largest was 40 centimeters. The mean circumference was 33.9 centimeters with a standard deviation of 1.9 (Table 6).

In analyzing the data in terms of birth weight percentiles on the growth charts (Table 6), 1 infant (3.8%) was found in the 0-25 percentile group, 2 (7.7%) were found in the 26-50 percentile group, 1 (3.8%) was found in the 51-75 percentile

group, 14 (53.8%) were found in the 76-100 percentile group, and 8 (30.8%) were missing data.

Length data were collected on 18 infants with the largest numbers (n = 6, 23.1%) in both the 0-25 and 51-75 percentile groups. Data on head circumference were documented on 16 infants. The infants were equally distributed between all groups (n = 4, 15.4%) (Table 7).

Table 6

Birth Data (N = 26)

Variable	n	Mean	Std Dev	Minimum	Maximum
Weight	18	3232	479.2	2665	4167
Length	18	48.1	2.4	45	53
Head	16	33.9	1.9	32	40

Note: Normed values established using Department of Health, Education, and Welfare Growth Charts for boys and girls birth to 36 months, distributed by Mead Johnson, 1985. (Frequencies represent only the infants for which data were available.)

APGAR Scores

One and 5 minute APGAR scores were documented on 7 infants. For the purpose of analysis, the program assigned

APGAR scores into four groups; these were classified as follows: 8-10 = excellent, 6-7 = good, 4-5 = fair, and less than 4 = poor. Two infants rated in the good range and 15 in the excellent range on the 1 minute APGAR score. One infant rated good and 16 rated excellent on the 5 minute APGAR score. Only 1 infant received an APGAR score of less than 8 at both 1 and 5 minutes; this infant was vigorously resuscitated after

Table 7

Birth Percentiles (N = 26)

Percentile	Weight	Length	Head Circumference
	n	n	n
0-25	1 (03.8%)	6 (23.1%)	4 (15.4%)
26-50	2 (07.7%)	4 (15.3%)	4 (15.4%)
51-75	1 (03.8%)	6 (23.1%)	4 (15.4%)
76-100	14 (53.8%)	2 (07.7%)	4 (15.4%)
Missing	8 (30.8%)	8 (30.8%)	10 (38.5%)

Note: Normed values established using Department of Health, Education, and Welfare Growth Charts for boys and girls birth to 36 months, distributed by Mead Johnson, 1985. (Frequencies represent only the infants for which data were available.)

delivery and received scores of 6 at 1 minute and 7 at 5 minutes. No infants received scores below 6 (Table 8).

Toxicology Screens

Drug toxicology screens were done at the time of delivery on 12 of the 26 infant-mother pairs who delivered (46% of the

Table 8

APGAR Scores (N = 26)

APGAR		n (1 minute)	n (5 minute)
Excellent	8-10	15	16
Good	6-7	2	1
Fair	4-5	0	0
Poor	Below 4	0	0
Missing data		19	19

Note: Frequencies represent only the infants for which data were available.

sample). These data were in addition to previous drug data (Table 2) which showed the self-reported drugs of choice at the time of admission into the program. Nine babies were negative for drugs and 3 were positive. The infants were positive for cocaine (n = 1), cocaine and opiates (n = 1), and

marijuana (n = 1). Five mothers were negative and 7 were found to be positive. Marijuana was detected in three screens, opiates in two screens, cocaine in one screen, and opiates and cocaine in one screen (Table 9).

Table 9

Toxicology Screens (N = 26)

Drug Present	Mother n	Infant n
None	5	9
Marijuana	3	1
Opiates	2	0
Cocaine	1	1
Cocaine/Opiates	1	1
Missing	14	14

Complications

Eighteen of the 26 infants had documentation in the chart regarding whether or not there were complications at birth. Of the 18 infants, 9 were identified as having complications (34.6%), and 9 were without complications (34.6%). The complications were meconium stained fluid, rule out sepsis,

prematurity, resuscitation necessary at delivery, antibiotic times 14 days for sepsis, and Neonatal Abstinence Syndrome (Table 10).

Only two infants required extensive interventions. One infant died at 7 weeks of age. This infant received 14 days

Table 10

Newborn Complication (N = 26).

Complications	Frequency	Percent
Meconium stained fluid	3	11.3%
Prematurity	3	11.3%
Antibiotics (14 days)	3	11.3%
Neonatal Abstinence Syndrome	3	11.3%
Resuscitation at delivery	2	7.7%
Rule out sepsis	2	7.7%
None	9	34.6%
Missing	8	30.8%

Note: Frequencies represent only the 18 infants for which data were available. Some infants fell into more than one category.

of antibiotics, was discharged, then readmitted at 3 weeks of age for pneumonia. The Coroner's report was not available,

but there was no documented relationship between the mother's prenatal course and the infant's death. The second infant required pharmacological interventions to assist the infant's withdrawal during his hospital stay and until 3 months of age.

Maternal Factors

Drug Usage

The records kept on drug usage during the program were incomplete in many cases. The women's self-reporting data was not consistently recorded, the women may not have reported all of the times in which they used, and there was no effective method used to screen urine samples during the program. Due to these inconsistencies, analysis of drug usage within the program was not possible; over 90% of the data were missing.

Program Components

The client's gestation when entering the program varied greatly. The program's goal was to admit as early in the pregnancy as possible and no later than 28 weeks. The program had admitted 6 (16.7%) clients at 25-28 weeks, 6 (16.7%) clients at 21-24 weeks, 9 (25.0%) clients at 17-20 weeks, and 13 (36.0%) clients at 6-16 weeks (Table 11). There were two clients with missing data as to weeks of gestation when entered the program. The earliest admission was 6 weeks and the latest at 28 weeks. The mean was 18.5 weeks with a standard deviation of 6.1 (Table 11).

Due to poor documentation, it was difficult to ascertain accurate participation percentages. Complete data were available on 20 (55.65%) clients. The clients were placed into categories: excellent (4), good (3), fair (2), and poor (1) for their participation in the program. This rating was

Table 11

Gestation at Admission to Program (N = 36)

Weeks at Admission	Frequency	Percent
06-16	13	36.0%
17-20	9	25.0%
21-24	6	16.7%
25-28	6	16.7%
Missing	2	5.6%

Note: M = 18.5, SD = 6.1, range 6-28 weeks

assigned by looking at the total number of sessions a client could attend, based on date of admission, and the number she actually attended. They were rated for their prenatal attendance and their overall attendance by the program staff. Attendance in the program was found to be varied. In the prenatal portion of the program, most of the clients for whom data were collected attended poorly (n = 11). Only 1

attended enough to receive an excellent rating. There were 11 clients with missing data. In the overall program ratings, most of the clients who had available data attended poorly (n = 13). Three attended enough to receive a good rating. There were 16 clients with missing data (Table 12).

Table 12

Program Attendance (N = 36)

Rating	Overall n	Prenatal n
Poor (1)	13 (36.1%)	11 (30.6%)
Fair (2)	4 (11.1%)	7 (19.4%)
Good (3)	3 (09.4%)	6 (16.7%)
Excellent (4)	0 (00.0%)	1 (02.8%)
Missing	16 (44.4%)	11 (30.6%)

Summary

The data describe a sample of 36 mothers, predominately Hispanic, who had used a variety of drugs. Mothers fell most frequently within the 25-29 year age group. Of the 36 women, 26 had delivered infants. Overall, most of these infants were found to be average for gestational age, and were delivered at

term. Of the infants with available data, only 9 infants experienced complications at delivery.

Toxicology screens were done on 46% of the mothers and infants. The infants had 9 negative and 3 positive screens. The mothers had 5 negative and 7 positive screens. The screens showed marijuana, cocaine, and opiates.

Missing data and poor documentation prevented data analysis of drug usage during the program. Program admittance for the mothers varied from 6 to 28 weeks gestation. Attendance data indicated that overall participation in the program was poor.

Chapter 5

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine perinatal drug-specific education in hopes of improving fetal and neonatal outcome by stopping, or limiting the use of cocaine and other drugs during pregnancy. The study used a descriptive retrospective design to investigate a perinatal substance abuse treatment program. The research question for this study was: What are the perinatal birth data, the drug usage patterns, and the program participation rates of clients in a perinatal substance abuse program?

The sample consisted of 36 women of whom 26 (72.2%) had delivered. The client population was predominantly Hispanic (55.6%), with a mean age of 26.3 years. The most frequent age group reported was the 25-29 year group (38.9%). Of the women in the treatment program, 75% (n = 27) volunteered to participate and 22.2% (n = 8) were court ordered. In this sample, 58.3% of the woman smoked. The primary drugs of choice reported by the women were alcohol (38.9%), cocaine (30.6%), and heroin (19.4%). The secondary drug of choice was cocaine (33.3%), alcohol (22.2%), and heroin (16.7%).

Twenty-six infants were delivered to women in the program. However, complete data were available on only 11 (42.3%) and partial data on 8 (30.8%).

Overall the infants found in this study had a positive outcome. From the 18 infants with available data, it was noted that only 2 of the infants were SGA. Fifteen infants delivered at term. The mean weight was 3232 grams with 53.8% of the sample falling within the 76-100 percentile on the Mead Johnson Growth Chart. The mean length was found to be 48.1 centimeters and on the growth chart, 23.1% of the sample fell in both the 0-25 percentile group and in the 51-75 percentile group. Head circumference fell equally into all the growth chart percentiles. APGAR scores were above 8 for the 1 and 5 minute scores on all but 2 infants.

Toxicology screens were done on 12 mothers and 12 infants at the time of delivery, with 9 negative for infants and 5 negative for mothers. Of the 18 infants with birth data, complications were documented in the charts of 9. The most frequently occurring complications were: meconium stained fluid (n =3), prematurity (n = 3), antibiotics (14 days) (n =3), Neonatal Abstinence Syndrome (n =3), resuscitation (n =2), and rule out sepsis (n = 2). One infant required pharmacologic treatment for withdrawal for 3 months, and one infant died at 7 weeks of age from choking.

Program admittance varied from 6 to 28 weeks gestation (M =18.5) with 36% admitted by 16 weeks, and 61% admitted by 20 weeks. Participation data were complete for 55.6% of the clients and indicated that overall participation (36.1%) and

prenatal participation in the program (30.6%) were rated as poor.

Implications

The overall birth outcomes from this study were positive. The clients in the program were predominately Hispanic, smokers, and used alcohol, cocaine and heroin as primary drugs of choice. However, the program evaluator reports that the clients who completed all of the program and those who tend to have the most positive outcomes tend to be white, non-smokers, with alcohol as their primary drug of choice (K. West, personal communication, July 8, 1992). This may indicate one explanation for the poor attendance and participation in the program. The program may not meet the needs of all its population.

Developing drug-specific educational programs may discourage childbearing women from using drugs and may further improve the birth outcomes and the future for their children and families. These programs may be needed to assist the women in learning to cope with stress, adapting their life styles for a drug-free existence, and supporting them in their educational, sexual, psychosocial, and socioeconomic needs. The programs need to fit the population in terms of race, socioeconomic status, drug of choice, and educational level. This may be a difficult task. Programs may not really understand these women and how to reach them effectively. One program may well not meet the needs of each individual client.

In these programs, early prevention is the key to success with drug-exposed infants. The earlier a pregnant user enters a program, the greater the potential for a positive neonatal outcome.

There are studies which analyze birth outcomes, but there has been little published concerning prenatal programs for substance abusing women and their outcomes. The majority of the studies have focused on heroin and cocaine effects on the newborn; little focus has been given to alcohol as a primary drug of choice (Bushong, 1989; Chasnoff et al., 1985; Cohen, 1990; Escomila-Modenero, 1977; Hutchings, 1990; Kaye et al., 1989; Levy & Koren, 1990; Lynch & McKeon, 1990; Moran, 1990; Torrence & Horns, 1989).

The sample was found to be consistent with published studies on mother's age, infant's length, types of neonatal complications, and gestational age (Bingol, Fuchs, Diaz, Stone, & Gromisch, 1987; Chouteau, Nameron, & Leppert, 1988; Giles et al., 1989; Kaye et al., 1989; MacGregor, Keith, Bachicha, & Chasnoff, 1989; Van Baar, Fluery, Soepatmi, Ultee, & Wesselman, 1989). Birth weight, head circumference, percentage of AGA infants, and APGAR scores were found to be improved for this sample as compared to studies which look at polydrug using populations (Bingol et al., 1987; Burkett, Yasin, & Palow, 1990; Deren, Blanche, & Schmeidler, 1990; Kaye et al., 1989; MacGregor, Keith, Bachicha, & Chasnoff, 1989;

Spence, Williams, Digregorio, Kirby-McDonnell, & Polansky, 1991; Van Baar, Fleury, Soepatmi et al., 1989).

Recommendations

This study should be replicated with a larger sample. A longitudinal study to follow children of substance abusing mothers for a minimum of 5 years to determine the long-term effects from prenatal drug exposure would be preferable. A comparison with similar programs would provide very useful information.

To continue this study, it would be necessary to improve the data collection tools and the documentation by the program staff. Staff development and education of the staff to increase their understanding of the program and research goals are essential.

There is a need to develop effective prenatal programs to improve pregnancy outcomes. Participation is a key factor which must be explored. Adapting the program structure and content to better meet the needs of the clients may improve attendance and participation. By addressing the pregnant woman's current needs and stressors, being accessible to her and accommodating to her whenever she appears at the program, by providing child care, and by providing her access through transportation and through referrals to the services she needs to assist in her recovery, programs may see improved participation and outcomes (Lone, 1991). An ongoing evaluation to determine client compliance would assist the

staff in providing the best possible program for each individual client.

The study's design and small sample did not allow determination of a possible relationship between participation and outcome. There is a need for research addressing this relationship. An assumption may be made that health education, social support, and positive role modeling provide benefits to substance abusing mothers.

Studies are inadequate in the areas of prenatal substance abuse treatment programs and long-term outcomes for both women and children. A determination of what works best is necessary in order to make programs available to women which meet the specific needs of different population groups. The earlier the intervention the greater the likelihood of a positive outcome. Knowledge is essential to meet and overcome this challenge.

REFERENCES

Bauchner, H., Zuckerman, B., McClain, M., Frank, D., Freid, L., & Kayne, H. (1988). Risk of sudden infant death syndrome among infants with in utero exposure to cocaine. Journal of Pediatrics, 113(5), 831-833.

Bawden, M., Ralph, J., & Herrick, C. A. (1990). Enhancing the coping skills of mothers with developmentally delayed children. Journal of Child and Adolescent Psychiatric and Mental Health Nursing, 4(1), 25-8.

Bingol, N., Fuchs, M., Draz, V., Stone, R., & Gromisch, D. (1987). Teratogenicity of cocaine in humans. Fetal and Neonatal Medicine, 110(1), 93-96.

Briggs, G. G., Freeman, R., & Yaffe, S. (1990). Drugs in pregnancy and lactation (3rd. ed.). Baltimore: Williams & Wilkins.

Burkett, G., Yasin, S., & Palow, D. (1990). Perinatal implications of cocaine exposure. The Journal of Reproductive Medicine, 35, 35-42.

Bushong, M. (1989, May). Perinatal Substance Abuse Legislation. Symposium for perinatal nurses at Salinas Valley Memorial Hospital. Salinas, CA.

Chasnoff, I. (1987). Perinatal effects of cocaine. Contemporary OB/Gyn, 29, 163-179.

Chasnoff, I., Burns, W., Schnoll, S., & Burns, K. (1985) Cocaine use in pregnancy. New England Journal of Medicine, 313, 666-669.

Chouteau, M, Nameron, P., & Leppert, P. (1988). The effect of cocaine abuse on birth weight and gestational age. Obstetrics and Gynecology, 72(3), 351-354.

Chavkin, W., Allen, M. H., & Oberman, J. D. (1991). Drug abuse and pregnancy: Some questions on public policy, clinical management, and maternal and fetal rights. Birth, 18(2), 107-111.

Cohen, R. S. (1990, May). Perinatal Drug Abuse. Mid-Coastal Counties Perinatal Outreach Program. Symposium for perinatal nurses at Salinas Valley Memorial Hospital. Salinas, CA.

Connor, K. (1989). Drug exposed infants-summary of related legislation. Senate Office of Research: 10/19/89. Sacramento, CA.

Cordero, L., & Custard, M. (1990). Effects of maternal cocaine abuse on perinatal and infant outcome. Ohio Medicine, 86, 410-412.

Deren,S., Blanche, F., & Schmeidler, J. (1990). Children of substance abusers in New York state. New York Journal of Medicine, 4, 179-184.

Dixon, B. (1989). Environmental effects on fetal development. Report: California Department of Education.

Escomila-Mondenero J. (1977). Women: pregnancy, children, and addiction. Journal of Psychedelic Drugs, 9(1), 59-66.

Fawcett, J. (1990). Preparation for caesarean childbirth: Derivation of a nursing intervention from the Roy Adaptation Model. Journal of Advanced Nursing, 15, 1418-1425.

Finkelstein, N. (1990, Sept.). Treatment Issues: Women and Substance Abuse. Symposium for the National Coalition on Alcohol and Drug Dependent Women and Their Children. Cambridge, MA.

Finnegan, L. (1982). Substance abuse-implications for the newborn. Perinatology/Neonatology, 6, 260-266.

Fitzpatrick, J. J., & Whall, A. L. (1989). Conceptual models of nursing: Analysis and application (2nd ed.). San Mateo: Appleton & Lange.

Flandermeyer, A. A. (1987). A comparison of the effects of heroin and cocaine abuse upon the neonate. Neonatal Network, 6, 42-48.

Giles, W., Patterson, T., Sanders, F., Botey, R., Thomas, D, & Collins, J. (1989). Outpatient methadone programme for pregnant heroin using women. Australian and New Zealand Journal of Obstetrics and Gynecology, 3(1), 225-229.

Hanchett, E. (1990). Nursing models and community as client. Nursing Science Quarterly, 3(2), 67-72.

Hopkins, E. (1990). Childhood's end. Rolling Stone, Issue 589, pp. 66-72, 108, 110.

Howard, J. (1989). Cocaine and its effects on the newborn. Developmental Medicine and Child Neurology, 31, 255-263.

Howard, J., Beckwith, L., Rodnig, C., & Kropenske, V. (1989). The development of young children of substance abusing parents: Insights from seven years of intervention and research. Zero to Three, 9(5), 8-12.

Hoyme, E., Jones, K., Dixon, S., Jewitt, J., Hanson, J., Robinson, L., Msall, M., & Allanson, J. E. (1990). Prenatal cocaine exposure and fetal vascular disruptions. Pediatrics, 85(5), 743-747.

Hutchings, D. E. (1990). Issues of risk assessment: lessons from the use and abuse of drugs during pregnancy. Neurotoxicology and Teratology, 12, 183-189.

Jack, B. W., Davis, S., Culpepper, L., & Hunt, V. (1990). Cocaine abuse in maternal-child health care. Journal of Family Practice, 31(5), 477-488.

Janke, J. R. (1990). Prenatal cocaine use-effects on perinatal outcome. Journal of Nurse Midwifery, 35(2), 74-77.

Jessup, M., & Green, J. R. (1987). Treatment of the pregnant alcohol-dependent woman. Journal of Psychoactive Drugs, 19(2), 193-202.

Jessup, M., & Roth, R. (1988). Drugs and alcohol--clinical and legal perspectives on prenatal drug and alcohol use: Guideline for individual and community response. Medicine and Law, 7, 377-389.

Kaye, K., Elkind, L., Goldberg, D., & Tytun, A. (1989) Birth outcomes for infants of drug abusing mothers. New York State Journal of Medicine, 89, 256-261.

Kennard, M. (1990). Cocaine used during pregnancy: Fetal and neonatal effects. Journal of Perinatal Nursing, 3 (4), 53-63.

Levy, M., & Koren, G. (1990). Obstetric and neonatal effects of drugs of abuse. Emergency Medicine Clinics of North America, 8(3), 633-652.

Lewis, K. D., Bennett, B., & Schmeder, N. H. (1989) The care of infants menaced by cocaine abuse. The American Journal of Maternal/Child Nursing, 14, 324-329.

Lindenberg, C. S., Alexander, E. M., Gendrop, S. C., Nencioli, M., & Williams, D. G. (1991). A review of the literature on cocaine abuse in pregnancy. Nursing Research, 40(2), 69-75.

Little, B. B., Snell, L. M., Klein, V. R., & Gilstrap, L. C. (1989). Cocaine abuse during pregnancy: Maternal and fetal implications. Obstetrics and Gynecology, 73(2), 157-160.

Lone, P. (1991). Silencing crack addiction. The American Journal of Maternal/Child Nursing, 16, 202-205.

Lynch, M., & McKeon, V. (1990). Cocaine used during pregnancy research findings and clinical implications. Journal of Obstetric, Gynecologic, and Neonatal Nursing, 19(4), 285-292.

MacGregor, S., Keith, L., Bachicha, J., & Chasnoff, I. (1989). Cocaine abuse during pregnancy: Correlation between prenatal care and perinatal outcome. Obstetrics and Gynecology, 74(6), 882-885.

Marriner-Tomey, A. (1989). Nursing theorists and their work (2nd ed.). St. Louis: Mosby.

Miller, B. F., & Keane, C. B. (1987). Encyclopedia and dictionary of medicine, nursing, and allied health (4th ed.). Philadelphia:
Saunders.

Miller-Karas, E., & Quaintance, C. (1990, May). Chemical Dependency in the Perinatal Patient. Symposium conducted by Mid-Coastal Counties Perinatal Outreach Program at Salinas Valley Memorial Hospital, Salinas, CA.

Moran, B. (1990, Sept.). Maternal Substance Abuse. Symposium for the perinatal nurses at Community Hospital of the Peninsula. Monterey, CA.

OSAP-The Office for Substance Abuse Prevention. (1992, Jan.). Prevention in Perspective. Symposium conducted in Washington, D.C. for OSAP workshop.

Peddicord, K. (1991). Strategies for promoting stress reduction and relaxation. Nursing Clinics of North America, 26(4), 867-874.

Reed, B. G. (1987). Developing women-sensitive drug dependence treatment services: Why so difficult? Journal of Psychoactive Drugs, 19(2), 151-163.

Report of the Expert Advisory Committee on the use of drugs in the treatment of abuse and dependence to narcotic and controlled drugs. (1990). Canadian Medical Association Journal, 9, 861-865.

Riehl-Sisca, J. (1989). Conceptual models for nursing practice. (3rd ed.). Norwalk, CT: Appleton & Lange.

Roland, E. H., & Volpe, J. J. (1989). Effect of maternal cocaine use on the fetus and newborn: Review of literature. Pediatric Neuroscience, 15, 88-94.

Roy, C. (1984). Introduction to nursing: An adaptation model (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Schneider, J. W., & Chasnoff, I. J. (1987). Cocaine abuse during pregnancy: Its effects on infant motor development a clinical perspective. Topics in Acute Care and Trauma Rehabilitation, 2, 59-69.

Sloan, L. B., Gay, J. W., Snyder, S. W. , & Bales, W. R. (1992). Substance abuse during pregnancy in a rural population. Obstetrics and Gynecology, 79(2), 245-248.

Spence, M., Williams, R., Digregorio, G., Kirby-McDonnell, A., & Polansky, M. (1991). The relationship between recent cocaine use and pregnancy outcome. Obstetrics and Gynecology, 78(3), 326-329.

Sproat, K. V. (1990, September). Special current: Maternal addiction. Ross Laboratories. Columbus, Ohio. p. 1-6.

Sullivan, K. R. (1990). Maternal implications of cocaine use during pregnancy. Journal of Perinatology-Neonatology Nursing, 3(4), 12-25.

Torrence, C. R., & Horns, K. M. (1989). Appraisal and caregiving for the drug addicted infant. Neonatal Network, 8(3), 49-59.

VanBaar, A. L., Fleury, P., Soepatmi, S., Ultee, C. A., & Wesselman, P. J. M. (1989). Neonatal behavior after drug dependent pregnancy. Archives of Disease in Childhood, 64, 235-240.

VanBaar, A. L., Fleury, P., & Ultee, C. A. (1989). Behavior in the first year after drug dependent pregnancy. Archives of Disease in Childhood, 64, 241-245.

Appendix A

Addiction Severity Index

INSTRUCTIONS

1. Leave No Blanks — Where appropriate code items: X = question not answered
   N = question not applicable
   Use only one character per item.
2. Item numbers circled are to be asked at follow-up. Items with an asterisk are cumulative and should be rephrased at follow-up (see Manual).
3. Space is provided after sections for additional pertinent information.

ADDICTION SEVERITY INDEX

SEVERITY RATINGS

The seventy ratings are interviewer estimates of the patient's need for additional treatment in each area. The scales range from 0 (no treatment necessary) to 9 (treatment needed to intervene in life-threatening situation). Each rating is based upon the patient's history of problem symptoms, present condition and subjective assessment of his treatment needs in a given area. For a detailed description of severity ratings' derivation procedures and conventions, see manual.

Third Edition

SUMMARY OF PATIENTS RATING SCALE

0 - Not at all
1 - Slightly
2 - Moderately
3 - Considerably
4 - Extremely

I.D. NUMBER

LAST 4 DIGITS OF SSN

DATE OF ADMISSION

DATE OF INTERVIEW

TIME BEGUN :

TIME ENDED :

CLASS:
1 - Intake
2 - Follow-up

CONTACT CODE:
1 - In Person
2 - Phone
3 - Mail

GENDER:
1 - Male
2 - Female

TREATMENT EPISODE NUMBER

INTERVIEWER CODE NUMBER

SPECIAL:
1 - Patient terminated
2 - Patient refused
3 - Patient unable to respond

GENERAL INFORMATION

NAME _____

CURRENT ADDRESS _____

_____

_____

GEOGRAPHIC CODE

1. How long have you lived at this address? YRS. MOS.
2. Is this residence owned by you or your family?
   0 - No 1 - Yes
3. DATE OF BIRTH
4. RACE
   1 - White (Not of Hispanic Origin)
   2 - Black (Not of Hispanic Origin)
   3 - American Indian
   4 - Alaskan Native
   5 - Asian or Pacific Islander
   6 - Hispanic - Mexican
   7 - Hispanic - Puerto Rican
   8 - Hispanic - Cuban
   9 - Other Hispanic
5. RELIGIOUS PREFERENCE
   1 - Protestant 4 - Islamic
   2 - Catholic 5 - Other
   3 - Jewish 6 - None

(6) Have you been in a controlled environment in the past 30 days?
   1 - No
   2 - Jail
   3 - Alcohol or Drug Treatment
   4 - Medical Treatment
   5 - Psychiatric Treatment
   6 - Other _____

(7) How many days?

TEST RESULTS

Shipley

C.Q.

I.Q.

Beck
Total Score

CARD 1

SEVERITY PROFILE

	PROBLEMS	MEDICAL	EMP/SUP	ALCOHOL	DRUG	LEGAL	FAM/SOC	PSYCH
9								
8								
7								
6								
5								
4								
3								
2								
1								
0								

Patient I.D. Card Imprint

I.D. 1 [ ][ ][ ][ ]

MEDICAL STATUS

(1) How many times in your life have you been hospitalized for medical problems? [ ][ ] 5
(Include o.d.'s, d.t.'s, exclude detox.)

2. How long ago was your last hospitalization for a physical problem? [ ][ ] YRS. [ ][ ] MOS.

3. Do you have any chronic medical problems which continue to interfere with your life? [ ]
0 - No 1 - Yes

(4) Are you taking any prescribed medication on a regular basis for a physical problem? [ ]
0 - No 1 - Yes

(5) Do you receive a pension for a physical disability? *(Exclude psychiatric disability.)* [ ]
0 - No
1 - Yes _____ Specify

(6) How many days have you experienced medical problems in the past 30? [ ][ ]

FOR QUESTIONS 7 & 8 PLEASE ASK PATIENT TO USE THE PATIENT'S RATING SCALE.

(7) How troubled or bothered have you been by these medical problems in the past 30 days? [ ]

(8) How important to you *now* is treatment for these medical problems? [ ]

INTERVIEWER SEVERITY RATING

(9) How would you rate the patient's need for medical treatment? [ ]

CONFIDENCE RATINGS

Is the above information significantly distorted by:

(10) Patient's misrepresentation? [ ]
0 - No 1 - Yes

(11) Patient's inability to understand? [ ]
0 - No 1 - Yes 20

COMMENTS

EMPLOYMENT/SUPPORT STATUS

(1) Education completed *(GED = 12 years)* [ ][ ] YRS. [ ][ ] MOS.

(2) Training or technical education completed [ ][ ] MOS.

3. Do you have a profession, trade or skill? [ ]
0 - No
1 - Yes _____ Specify

(4) Do you have a valid driver's license? [ ]
0 - No 1 - Yes

(5) Do you have an automobile available for your use? *(Answer No if no valid driver's license.)* [ ]
0 - No 1 — Yes

6. How long was your longest full-time job? [ ][ ] YRS. [ ][ ] MOS.

(7) Usual (or last) occupation. [ ]
_____ *(Specify in detail)*

(8) Does someone contribute to your support in any way? [ ]
0 - No 1 - Yes

(9) (ONLY IF ITEM 8 IS YES) Does this constitute the majority of your support? [ ]
0 - No 1 - Yes

10. Usual employment pattern, past 3 years. [ ]
1 - full time (40 hrs/wk)
2 - part time (reg. hrs)
3 - part time (irreg., daywork)
4 - student
5 - service
6 - retired/disability
7 - unemployed
8 - in controlled environment

(11) How many days were you paid for working in the past 30? *(Include "under the table" work.)* [ ][ ]

How much money did you receive from the following sources in the past 30 days?

(12) Employment *(net income)* [ ][ ][ ][ ]

(13) Unemployment compensation [ ][ ][ ][ ]

(14) DPA [ ][ ][ ][ ]

(15) Pension, benefits or social security [ ][ ][ ][ ]

(16) Mate, family or friends *(Money for personal expenses).* [ ][ ][ ][ ]

(17) Illegal [ ][ ][ ][ ]

(18) How many people depend on you for the majority of their food, shelter, etc.? [ ]

(19) How many days have you experienced employment problems in the past 30? [ ][ ]

FOR QUESTIONS 20 & 21 PLEASE ASK PATIENT TO USE THE PATIENT'S RATING SCALE

(20) How troubled or bothered have you been by these employment problems in the past 30 days? [ ]

(21) How important to you *now* is counseling for these employment problems? [ ]

INTERVIEWER SEVERITY RATING

(22) How would you rate the patient's need for employment counseling? [ ]

CONFIDENCE RATINGS

Is the above information significantly distorted by:

(23) Patient's misrepresentation? [ ]
0 - No 1 - Yes

(24) Patient's inability to understand? [ ]
0 - No 1 - Yes 71

CARD 2 5

COMMENTS

I.D. 1 [| | | |]

CODE#

		PAST 30 DAYS	LIFETIME USE YRS	LIFETIME USE MOS.
01	Alcohol - Any use at all			
02	Alcohol - To intoxication			
03	Heroin			
04	Methadone			
05	Other opiates/ analgesics			
06	Barbiturates			
07	Other sed/ hyp/tranq.			
08	Cocaine			
09	Amphetamines			
10	Cannabis			
11	Hallucinogens			
12	Inhalants			

CARD 3 80

Note: See manual for representative examples for each drug class

I.D. 1 [| | | |]

13 More than one substance per day *(Incl. alcohol).* [|] DAYS [| | |] YRS. MOS.

DRUG/ALCOHOL USE

14 Which substance is the major problem? *Please code as above or 00-No problem;* 15-Alcohol & Drug (Dual addiction); 16-Polydrug; *when not clear, ask patient.* [|]

15. How long was your last period of voluntary abstinence from this major substance? *(00 - never abstinent).* [|] MOS.

16. How many months ago did this abstinence end? *(00 - still abstinent).* [|]

* 17 How many times have you:

Had alcohol d.t.'s [|]

Overdosed on drugs [|]

* 18 How many times in your life have you been treated for:

Alcohol Abuse [|]

Drug Abuse [|]

* 19 How many of these were detox only?

Alcohol [|]

Drug [|]

20 How much would you say you spent during the past 30 days on:

Alcohol [| | | .]

Drugs [| | |]

21 How many days have you been treated in an outpatient setting for alcohol or drugs in the past 30 days *(Include NA, AA).* [|]

22 How many days in the past 30 have you experienced:

Alcohol Problems [|]

Drug Problems [|]

FOR QUESTIONS 23 & 24 PLEASE ASK PATIENT TO USE THE PATIENT'S RATING SCALE

23 How troubled or bothered have you been in the past 30 days by these:

Alcohol Problems [ ]

Drug Problems [ ]

24 How important to you *now* is treatment for these:

Alcohol Problems [ ]

Drug Problems [ ]

INTERVIEWER SEVERITY RATING

25 How would you rate the patient's need for treatment for:

Alcohol Abuse [ ]

Drug Abuse [ ]

CONFIDENCE RATINGS

Is the above information significantly distorted by:

26 Patient's misrepresentation? [ ]

0 — No 1 — Yes

27 Patient's inability to understand? [ ]

0 — No 1 — Yes 50

CARD 4 90

COMMENTS

I.D. 1 [| | | |]

1. Was this admission prompted or suggested by the criminal justice system (judge, probation/ parole officer, etc.)?

0 — No 1 — Yes [ ]

(2) Are you on probation or parole?

0 — No 1 — Yes [ ]

How many times in your life have you been arrested and charged with the following criminal offenses:

CODE #

* (03) - shoplifting/vandalism [|]
* (04) - parole/probation violations [|]
* (05) - drug charges [|]
* (06) - forgery [|]
* (07) - weapons offense [|]
* (08) - burglary, larceny, B & E [|]
* (09) - robbery [|]
* (10) - assault [|]
* (11) - arson [|]
* (12) - rape [|]
* (13) - homicide, manslaughter [|]
* (14) - other [|]

LEGAL STATUS

* (15) How many of these charges resulted in convictions? [|]

How many times in your life have you been charged with the following:

* (16) Disorderly conduct, vagrancy, public intoxication [|]
* (17) Driving while intoxicated [|]
* (18) Major driving violations (reckless driving, speeding, no license, etc.). [|]
* (19) How many months were you incarcerated in your life? [|] MOS.

20. How long was your last incarceration? [|] MOS.

21. What was it for? *(Use code 3-14, 16-18. If multiple charges, code most severe)* [|]

(22) Are you presently awaiting charges, trial or sentence? [ ]

0 — No 1 — Yes

(23) What for? (If multiple *charges, use most severe).* [|]

(24) How many days in the past 30 were you detained or incarcerated? [|]

(25) How many days in the past 30 have you engaged in illegal activities for profit? [|]

FOR QUESTIONS 26 & 27 PLEASE ASK PATIENT TO USE THE PATIENT'S RATING SCALE

(26) How serious do you feel your present legal problems are? *(Exclude civil problems)* [ ]

(27) How important to you *now* is counseling or referral for these legal problems? [ ]

INTERVIEWER SEVERITY RATING

(28) How would you rate the patient's need for legal services or counseling? [ ]

CONFIDENCE RATINGS

Is the above information significantly distorted by:

(29) Patient's misrepresentation? [ ]

0 — No 1 — Yes

(30) Patient's inability to understand? [ ]

0 — No 1 — Yes 55

CARD 5 80

COMMENTS

I.D. 1 [ ]

(1) Marital Status [ ]
1 - Married 4 - Separated
2 - Remarried 5 - Divorced
3 - Widowed 6 - Never Married

2. How long have you been in this marital status? [ ] YRS. [ ] MOS.
(If never married, since age 18).

(3) Are you satisfied with this situation? [ ]
0 - No
1 - Indifferent
2 - Yes

* (4) Usual living arrangements (past 3 yr.) [ ]
1 - With sexual partner and children
2 - With sexual partner alone
3 - With parents
4 - With family
5 - With friends
6 - Alone
7 - Controlled environment
8 - No stable arrangements

5. How long have you lived in these arrangements. [ ] YRS. [ ] MOS.
(If with parents or family, since age 18).

(5) Are you satisfied with these living arrangements? [ ]
0 - No
1 - Indifferent
2 - Yes

FAMILY/SOCIAL RELATIONSHIPS

(7) With whom do you spend most of your free time: [ ]
1 - Family 3 - Alone
2 - Friends

(8) Are you satisfied with spending your free time this way? [ ]
0 - No 2 - Yes
1 - Indifferent

(9) How many *close* friends do you have? [ ]

(10) How many days in the past 30 have you had serious conflicts:
(A) with your family? [ ]
(B) with other people? (excluding family). [ ]

Have you had significant periods in which you have experienced serious problems with:
0 - No 1 - Yes

	PAST 30 DAYS	IN YOUR LIFE
(11) Mother		
(12) Father		
(13) Brother/Sisters		
(14) Sexual partner/spouse		
(15) Children		
(16) Other significant family _____		
(17) Close friends		
(18) Neighbors		
(19) Co-workers		

FOR QUESTIONS 20-23 PLEASE ASK PATIENT TO USE THE PATIENT'S RATING SCALE

How troubled or bothered have you been in the past 30 days by these:

(20) Family problems? [ ]
(21) Social problems? [ ]

How important to you now is treatment or counseling for these:

(22) Family problems? [ ]
(23) Social problems? [ ]

INTERVIEWER SEVERITY RATING

(24) How would you rate the patient's need for family and/or social counseling? [ ]

CONFIDENCE RATINGS

Is the above information significantly distorted by:

(25) Patient's misrepresentation? [ ]
0 - No 1 - Yes

(26) Patient's inability to understand? [ ]
0 - No 1 - Yes 49

CARD [6] 80

COMMENTS

(Please add extra comments on back of page)

I.D. 1 [ ]

* (1) How many times have you been treated for any psychological or emotional problems?
In a hospital. 5 [ ]
As an Opt. or Priv. patient [ ]

2. Do you receive a pension for a psychiatric disability? [ ]
0 - No 1 - Yes

Have you had a signficant period, (that was not a direct result of drug/alcohol use), in which you have:
0 - No 1 - Yes

	PAST 30 DAYS	IN YOUR LIFE
(3) Experienced serious depression		
(4) Experienced serious anxiety or tension		
(5) Experienced hallucinations		
(6) Experienced trouble understanding, concentrating or remembering		
(7) Experienced trouble controlling violent behavior		
(8) Experienced serious thoughts of suicide		
(9) Attempted suicide		
(10) Have you taken prescribed medication for any psychological/emotional problem		

PSYCHOLOGICAL STATUS

(11) How many days in the past 30 have you experienced these psychological or emotional problems? [ ]

FOR QUESTIONS 12 & 13 PLEASE ASK PATIENT TO USE THE PATIENT'S RATING SCALE

(12) How much have you been troubled or bothered by these psychological or emotional problems in the past 30 days? [ ]

(13) How important to you *now* is treatment for these psychological problems? [ ]

THE FOLLOWING ITEMS ARE TO BE COMPLETED BY THE INTERVIEWER

At the time of this interview, is patient:
0 - No 1 - Yes

(14) Obviously depressed/withdrawn [ ]

(15) Obviously hostile [ ]

(16) Obviously anxious/nervous [ ]

(17) Having trouble with reality testing, thought disorders, paranoid thinking [ ]

(18) Having trouble comprehending, concentrating, remembering [ ]

(19) Having suicidal thoughts [ ]

INTERVIEWER SEVERITY RATING

(20) How would you rate the patient's need for psychiatric/psychological treatment? [ ]

CONFIDENCE RATINGS

Is the above information significantly distorted by:

(21) Patient's misrepresentations? [ ]
0 - No 1 - Yes

(22) Patient's inability to understand? [ ]
0 - No 1 - Yes 38

CARD [7] 80

COMMENTS

(Please add extra comments on back of page)

A S I
ADDENDUM

GENERAL INFORMATION

Clients view or description of current problems

Housing _____

Financial _____

Relationship _____

Legal _____

Drugs/Alcohol _____

Other _____

Drugs/Alcohol effect your education? Yes___ No__
Poor grades ____
Poor attendance ____
Dropped out ____

ADDITIONAL FAMILY INFORMATION

1. Family members with a drug/alcohol problem/history? Yes___
   No____ - parents ____ siblings ____ spouse/mate ____
   children____.

2. Do you have legal custody of your children? Yes____ No____
   If not - Who _____

3. How many children do you have living with you? _____

4. Have you ever been sexually or physically abused? Yes____ No

   By whom? _____

5. Does your spouse/mate have a history of involvement with the criminal justice system? Yes____ No___
   Parole ____ probation____ Jail____
   Drug related? Yes____ No____

6. Are any family members willing to become involved in treatment with you? Yes____ No____ Who _____

PERINATAL

1. Have/did you see a doctor for this pregnancy? Yes____ No__

2. How many weeks are you into this pregnancy? _____

3. Have/did you receive any prenatal care? Yes____ No___

4. Number of Live Births? ____

5. Have any of your children been born with mental or physical problems? Yes___ No__

Explain_____

_____

6. Number of pregnancies terminated? _____

7. Were any terminated for medical reasons? Yes____ No___

Explain_____

_____

8. Have/did you use drugs/alcohol during this pregnancy? Yes___ No___
If yes how much/frequent? Drug of Choice?

_____

9. Did you use drugs during your previous pregnancies? Yes____ No__

10. Did/do you use birth control? Yes____ No____ Type_____

_____.

11. Was this a planned pregnancy? Yes____ No ____

TREATMENT HISTORY

(List all admissions to drug and/or alcohol treatment programs in past 3 years)

Approx. Date of Admission	Program	Approx. Date of Dis-charge	Reason for Discharge

Appendix B

Birth Data Collection Tool

MONTEREY COUNTY

DEPARTMENT OF HEALTH ROBERT J. MELTON, M.D., M.P.H., Director

PREVENTIVE MEDICINE ENVIRONMENTAL HEALTH HEALTH PROMOTION
MENTAL HEALTH ALCOHOL AND DRUG PROGRAMS EMERGENCY MEDICAL SERVICES

☐ 1270 NATIVIDAD ROAD, SALINAS, CALIFORNIA 93906-3198 (408) 755-4500
☐ 1200 AGUAJITO ROAD, MONTEREY, CALIFORNIA 93940-4898 (408) 647-7650
☐ 1180 BROADWAY, KING CITY, CALIFORNIA 93930 (408) 385-8350
☐ 1292 OLYMPIA AVENUE, SEASIDE, CALIFORNIA 93955 (408) 899-8100
☐ 955 BLANCO CIRCLE, SUITE D, SALINAS, CALIFORNIA 93901 (408) 755-4583

☒ PATTERNS PROGRAM
140 W. GABILAN
SALINAS, CA. 93901
(408) 755-5430

PLEASE REPLY TO ADDRESS CHECKED

I_____ authorize _____ Hospital to release the following information for myself and my child to MONTEREY COUNTY DEPARTMENT OF HEALTH, DIVISION OF ALCOHOL AND DRUG PROGRAMS, PATTERNS PROGRAM after the delivery of my child.This release will be in effect for one year following the birth of my child.

Gestational Age:		
APGAR SCORE:	1 min.:	
	5 min.:	
	10 min.:	
MEASUREMENTS:	Weight:	
	Length:	
	Chest:	
	Head:	
TOX. SCREEN:	Mother:	
	Infant:	
TYPE OF DELIVERY:		
SEX OF INFANT:		
LENGTH OF STAY:	Mother:	
	Infant:	
COMPLICATIONS:		

_____ _____
Signature of client Date

Appendix C

Client Program Participation Consent

PATTERNS PROGRAM
CONSENT FOR TREATMENT & CONDITIONS OF ADMISSION 69

I,_____, hereby voluntarily consent to participate in the Monterey County Department of Health, Division of Alcohol and Drug Programs - PATTERNS Program.

Patterns program is a comprehensive intensive day treatment program for pregnant women who use or abuse drugs and/or alcohol. It is a demonstration project which is funded by the Federal Department of Health and Human Services, Office of Substance Abuse Prevention.

Patterns provides the following services:

1. Intake and assessment
2. Individual, group and family counseling
3. Individual recovery planning
4. Case Management & Referrals
5. Drug and alcohol education
6. Parenting and prenatal education

As a client of PATTERNS, I understand that I have the following rights:

1. To not be denied services because of race, religion, gender, ethnicity, disability, sexual orientation or preference, or ability to pay.
2. To be treated with respect and dignity.
3. To have all records maintained by PATTERNS program treated as confidential in compliance with State and Federal law regulating the confidentiality of drug and alcohol programs. PATTERNS can only release information regarding your care under the following conditions:
   a. You consent to release this information in writing,
   b. We are ordered to release this information by a valid court order,
   c. In case of a medical emergency
   d. You are a threat to do harm to yourself or others,
   e. We have information about suspected child abuse or neglect which we are required to report under the California State Child Abuse Reporting law.

As a demonstration project, PATTERNS will be collecting statistical data regarding your treatment while in the program, the birth and developmental outcomes of your child, and follow-up information related to your drug use after completion of PATTERNS program. This data will be collected and reported in such a manner as to protect your identity.

As a client in PATTERNS program, you will be asked to submit to a urine analysis at least weekly. You will not be told when you will be expected to submit a urine specimen. A staff person of the same gender will observe you providing the urine specimen.

As a client of PATTERNS, you can be discharged for the following reasons:

1. Failure to comply with the orders of your Physician and to attend all appointments as required by your Physician.
2. Repeated failure to comply with the recovery plan as agreed upon between PATTERNS staff and yourself.
3. Violence against any participant in PATTERNS program or against program staff.

Please initial each section below to show that you agree with each statement:

_____ I consent to receiving intensive day treatment as described above & to follow the recovery plan agreed upon between PATTERNS staff and myself.

_____ I consent to the staff of PATTERNS, attempting to contact me for follow-up interview for up to one year following my discharge from PATTERNS program.

_____ I consent to the staff of PATTERNS, to follow-up with my child for the first five years following his/her birth through my participation with Children's Health & Disability Program.

_____ I agree to submit to a urine analysis at least weekly during my participation in PATTERNS program.

_____ I agree to allow PATTERNS staff and my Physician (Obstetrician and/or Pediatrician) to consult regarding my treatment and have signed a release of information in this regards.

_____ _____

Signature of Client Date

_____ _____

Signature of Staff Explaining This Form Date

PATTERNS:

Appendix D

Agency Consent

MONTEREY COUNTY

DEPARTMENT OF HEALTH ROBERT J. MELTON, M.D., M.P.H., Director

PREVENTIVE MEDICINE ENVIRONMENTAL HEALTH HEALTH PROMOTION

MENTAL HEALTH ALCOHOL AND DRUG PROGRAMS EMERGENCY MEDICAL SERVICES

☐ 1270 NATIVIDAD ROAD, SALINAS, CALIFORNIA 93906-3198 (408) 755-4500
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☐ 955 BLANCO CIRCLE, SUITE D, SALINAS, CALIFORNIA 93901 (408) 755-4583

PLEASE REPLY TO ADDRESS CHECKED

March 16, 1992

San Jose State University
School of Nursing
Graduate Studies

To Whom It May Concern:

Cynthia D. Beckett has presented a research proposal to the Monterey County Health Department, Division of Alcohol and Drug Programs. She will be doing the descriptive retrospective study as a part of the outcome evaluation for the Patterns Program.

Patterns is a demonstration project which is funded by the Department of Health and Human Services, Office of Substance Abuse Prevention. The program is operated by Monterey County Health Department, Division of Alcohol and Drug Programs.

Patterns provides comprehensive day treatment for pregnant substance using women and their children. Our outcome evaluation involves comparing the treatment experience of program women with the birth and developmental outcomes of infants.

Dr. Robert Melton, M.D. is the Principal Investigator. I am the program evaluator and will be working with Cynthia directly. We look forward to having Cynthia's participation and input. I will be happy to answer any questions or concerns and can be reached at (408) 422-9140.

Sincerely,

Karen E. West, M.A.
Patterns Evaluator

cc.: Robert Melton, M.D., Director of Health
Jody Parsons, Alcohol and Drug Programs Administrator
Valerie Golden, Program Coordinator

Appendix E

San Jose State University

Human Subjects Committee

SJSU SAN JOSE STATE UNIVERSITY
A campus of The California State University

Office of the Academic Vice President • Associate Academic Vice President • Graduate Studies and Research
One Washington Square • San José, California 95192-0025 • 408/924-2480

To: Cynthia Diane Beckett, Nursing
677 Melrose Drive
Salinas, CA 93901

From: Serena W. Stanford Serena W. Stanford
AAVP, Graduate Studies and Research

Date: May 4, 1992

The Human Subjects-Institutional Review Board has reviewed and approved your request for exemption from Human Subjects Review for the proposed study entitled:

> "Prenatal Substance Abuse Programs: Can Drug Specific Education Improve the Fetal and Neonatal Outcomes by Stopping the Use of Drugs During Pregnancy"

You may proceed with this study without further review by the Human Subjects-Institutional Review Board.

I do caution you, however, that Federal and State statutes and University policy require investigators conducting research under exempt categories to be knowledgeable of and comply with Federal and State regulations for the protection of human subjects in research. This includes providing necessary information to enable people to make an informed decision regarding participation in your study. Further, whenever people participate in your research as human subjects, they should be appropriately protected from risk. This includes the protection of the confidentiality of all data that may be collected from the subjects. If at any time a subject becomes injured or complains of injury, you must notify Dr. Serena Stanford immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised when people participate in your research as human subjects, each subject needs to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have questions, please contact me at 408-924-2480.

CC: Coleen Saylor, Ph.D.