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Publication Date

1998

Peer reviewed|Thesis/dissertation

The Social Environment of Pregnant Women and New Mothers

Who Use Crack Cocaine

by

Susan L. Adams

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Nursing

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA

San Francisco

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Dedication

I dedicate this dissertation to my children, Jessica and Jaron Farnham, who kept me grounded in reality and taught me the meaning of unconditional love. Without their love and support and the blessing of their presence in my life, this part of my adventure would not have been possible.

Acknowledgments

This project would not have been possible without the support from many different people who I would like to gratefully acknowledge. First, I would like to especially thank the women who agreed to share their stories so that others could benefit. It was a privilege to share the tears of their pain and the joys of their triumphs. I would also like to thank the dedicated treatment programs and clinical services who provided me the access to the women and their stories. The continuation of their programs offers hope for addicted women.

I wish to acknowledge the many dedicated faculty, colleagues, friends, and family who have helped me through inspiration, critique, encouragement, suggestions, cajoling and humor. It was through a group effort, that this project was completed.

First, I would like to thank my dissertation committee chaired by Diana Taylor who taught me the value of quantitative reasoning and the usefulness of tables. She challenged me to bring my critical thinking to a higher level. Jeanne DeJoseph helped me to fine tune my qualitative skills and gave me positive words of encouragement at key moments. Nanny Murrell did not let me lose sight of the difficulties women of color face in a white, male dominated society. And finally, Sheigla Murphy, offered me insights into the world of women addicts through her many years of sociological research in the San Francisco community.

Other important faculty included Jane Norbeck who allowed me to use and modify her instrument and offered important feedback about my social support ideas; Rob Slaughter, who guided me through methodologies; Jeannie Kayser-Jones, who after reviewing my work validated the importance of it with enthusiasm; Ramona Mercer, who inspired me through her own work with new mothers; Marty Jessup who is a tireless advocate locally and nationally for women who are dealing with

addiction; and finally, my mentor and friend, Steven Paul, without whom my statistical analysis would have been impossible. He was able to make regression analysis seem almost fun.

My research assistants, associates, and colleagues were vital to the data collection, analysis, and critique and included Edna Esnel, Karen Erlichmann, Mary Newberry, Robin Litt, Linda Sawyer, MarySue Heilemann, Terri Lambright, Carolyn Muir, Winnie Star, Doris Weyl, and Cathy Portje. The WWW group who encouraged me and kept me laughing.

I would also like to acknowledge my wonderful family who taught me many lessons in life and continue to challenge me and love me in their own unique ways including my parents Joe and June Adams, and my siblings Linda, Joe, Bruce, Rick, and the youngest, Mike, who checked in with me on our special line and encouraged me every step of the way. I am also grateful to the influence of my grandmother, Mary Hanes, who passed away during the course of this project. Her spiritual presence will forever be tangible in my life. I am also grateful for the love of my two children, Jessica and Jaron Farnham.

Other special friends included Jeff, Ian, and Madeline Westcott, Carl T., Sylvie Lemur, Jocelyn Nakashige, who kept reminding me that academia was not all there is to life. I have been touched by many during the course of my work and am grateful to all things big and small that were done for me.

Finally, I would like to gratefully acknowledge The Murdock Foundation and Wyeth-Ayerst Pharmaceuticals for their grant support of this project.

Abstract

THE SOCIAL ENVIRONMENT OF PREGNANT WOMEN AND NEW MOTHERS

WHO USE CRACK COCAINE

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University of California, San Francisco, 1998

Crack cocaine use is still considered a problem among minority
urban populations and in particular with childbearing women and their
children. This belief has been perpetuated by the media and the
government. The purpose of this study was to describe the social
environment of pregnant women and 3 to 5 month postpartum mothers within
the context of their health and personal resources and demands. A
longitudinal, prospective, descriptive study was designed using a multi-
method approach. Thirty women were interviewed during pregnancy (Time 1)
and 27 at postpartum (Time 2) using Hudson's General Contentment Scale
of depression and well-being, Hudson's Index of Self-esteem, and the
Norbeck Social Support Questionnaire. Two hour open-ended interviews
were also conducted at Time 1 and Time 2. Data analysis used descriptive
and comparative statistics for the instrumented data and a combination
of qualitative techniques including content and thematic analysis for
the interview data. Participants in this study were between 20 to 44
years of age (mean 31.8 years), mostly single, unemployed, and 60%
African American. All women were in prenatal care with 80% in drug
treatment at Time 1 and 65.4% in drug treatment at Time 2. Findings
included: (a) there were high rates of depression and low self-esteem
during pregnancy which improved at Time 2; (b) total family support was
inversely related to depression at Time 2; (c) the number of network
members remained stable between Time 1 and Time 2, but half of the
network members were replaced with new members at Time 2; (d) God and

health care providers played an important role in the lives of women in recovery; (e) many women survived episodes of violence in their lives from childhood through adulthood; (f) residential treatment programs provided positive and negative influences for recovery. These and other findings are discussed within the context of a modified model of support and implications for future research and practice.

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CHAPTER I: THE STUDY PROBLEM

Introduction

Substance abuse is a significant social and health care problem in the United States and worldwide. Use of crack cocaine (crack) has increased at an alarming rate in specific geographic locations in the United States, while decreasing in others. While Whites, by far, outnumber any other race for substance use in general, urban Black[1] communities have been identified as being at particular risk for crack use (Substance Abuse and Mental Health Services Administration (SAMHSA), 1995 & 1996). Many pieces of the social environment puzzle have been evaluated in cross-sectional studies, but the dynamics of the social environment are still poorly understood among crack using pregnant women and new mothers.

The Purpose of the Study

The purpose of this prospective, longitudinal, descriptive study was to explore the social environment of pregnant women and new mothers who used crack. For the purposes of this study, the social environment was defined as the social network, social support, the physical environment, and the social worlds within which women interacted.

Personal resources and demands and health factors were viewed as influential in the perception of the social environment and the way women used their social network. Personal resources included high self-esteem and well-being; personal demands included low self-esteem and depression; and health factors included substance use, recovery efforts, exposures to sexually transmitted infections, prenatal care, and birth

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[1]Most studies include African American and foreign born women of African descent and mixed racial descent together in one category identified as "Black". As a result of this, the term Black women will be retained unless cited studies specifically distinguish these populations.

control choices. These concepts will be described in relation to the social environment.

Statement of the Problem

Women who use crack in pregnancy and motherhood are faced with both personal and social demands and health risks. They are more likely to have grown up in families where addictive behaviors, and physical, emotional and sexual abuses may have occurred (Kronstadt, 1989; Yu & Perrine, 1997). Several authors have reported higher incidences of depression, low self esteem, dual and triple psychiatric disorders (Bakti, 1990; Bresnahan, Zuckerman, & Cabral, 1992; Burns, Melamed, Burns, Chasnoff, & Hatcher, 1985; Degen, Myers, Williams-Petersen, Knisely, & Schnoll, 1993; Ford, Hillard, Giesler, Lassen, & Thomas, 1989). These women may have experienced a variety of social problems including domestic violence, poverty, homelessness, deficiencies in health promoting social support in their networks, negative life events, and family addiction (Amaro, Fried, Cabral, & Zuckerman, 1990; Boyd & Mieczkowski, 1990; Brownell, Marlatt, Lichtenstein, & Wilson, 1986; Buckner & Mandell, 1990; Carlson & Siegal, 1991; Davis, 1990; Dumas, 1992; Fawzy, Coombs, & Gerber, 1983; Finklestein, 1993; Kronstadt, 1989; Myers & Brown, 1990; Reed, 1987; Zuckerman, Amaro, Bauchner, & Cabral, 1989). A physical environment which is saturated with drug users and drug houses provides triggers for use (Hawkins, Catalano, & Miller, 1992; Marlatt & Gordon, 1985; Wallace, 1989). Health risks may include malnutrition, human immunodeficiency virus (HIV), pregnancy complications, and neonatal complications (Black, Schuler, & Nair, 1993; Chasnoff, 1988; Chasnoff, Griffith, Macgregor, Dirkes, & Burns, 1989; Edwards, et al., 1994; Kennard, 1990; Jessup, 1992; Lindsay, et al., 1992; Robins & Mills, 1993). Finally, the social environment may be a stronger predictor of long-term health and development than the

intrauterine environment (Black, Schuler, & Nair, 1993; Myers, Olson, & Kaltenback, 1992; Scherling, 1994).

Personal and social resources, for example, high self-esteem, low depression, economic resources, and a supportive social network have contributed to the successful recovery from addictions for women (Degen, et al., 1993; Washton & Washton, 1990; Williams & Roberts, 1991; Zuckerman, et al., 1989). Although the demands seem overwhelming, pregnancy and impending motherhood have been found to be one of the strongest internal motivating factors for abstinence and recovery because most mothers care about their children (Kearney, Murphy, & Rosenbaum, 1994).

Much of what is known about the personal and social resources and demands of pregnant women and new mothers is derived from cross-sectional snapshots, instrumented constructions, retrospective views, and media hype. Although these methods have provided some information and the basis for hypotheses about the social environment of women who use crack, longitudinal prospective studies which investigate the social environment within the context of personal resources and demands have been missing.

Social support instruments have been utilized in the study of this population and have provided some puzzling results. For example, Norbeck & Anderson (1989) found that a group of White women who reported high social support practiced substance using behaviors. The question that follows is how can there be high support within the framework of poor health practices, especially when much of the early social support research found positive correlations between social support and health outcomes (Berkman & Syme, 1979; Lin, Simeone, Ensel, & Kuo, 1979; Nuckolls, Cassel, & Kaplan, 1972). Is social support always positive? These questions can not be addressed using forced choice instruments

alone. Understanding crack use and the multiple factors that can affect health, motherhood, and the social environment can lead to improvements in treatment and parenting.

A prospective, longitudinal, descriptive, multi-method study was conducted to investigate the social environment of pregnant women and new mothers who have used crack and to expand the knowledge base. The social environment was explored and described within the context of the personal resources, demands, and health factors of these women. Following the course of drug use and abstinence during pregnancy and new motherhood allowed direct observation of events as they occurred and before they were colored by distant memory reconstructions. Further, a mixed methods data collection approach offered the potential for a deeper understanding of the phenomenon so that treatment approaches could be further refined.

Significance of the Problem

Cocaine hydrochloride is a stimulant that can be ingested intravenously, inhaled nasally (snorting), and/or smoked (freebasing). Crack is an "inexpensive", illegal, highly addictive form of smokeable cocaine that derives its name from the crackling sound the rock makes when smoked in either a pipe, a cigarette, or a marijuana joint. Purity ranges from five to forty percent. Smokeable cocaine acts immediately after contact with the lungs. The "high" is short acting ranging from minutes to one hour (Carlson & Siegle, 1991). By the mid 1980's, crack became readily available, especially in large urban cities (Farkas & Parran, 1993). For a few dollars, a person could get high for a few minutes. This "inexpensive" habit could quickly become expensive as more rocks were needed to get high. This was confirmed by Caulkins (1997) who conducted a study comparing crack and powder cocaine prices in 14 cities in the United States and found no difference.

Important to the understanding of the social factors related to the personal and health effects of crack use is the speculation about how this form of cocaine was introduced and why it seems to have taken hold among urban African Americans. News reports have suggested CIA involvement in targeting and distributing crack into Black inner city neighborhoods. On October 1, 1996, Dan Rather of CBS reported in a national television broadcast that the CIA allegedly infused crack into Black inner city neighborhoods of Southern California in order acquire funds to covertly buy and ship arms to Central America. The coca plant, not grown in the United States, is a major money making commodity for some countries which have debt to the United States (Morales, 1989). There has also been a growing belief that the crack epidemic was imposed upon the inner cities by the dominant society and was leading to the mass genocide of African American communities (personal communication with Dr. Nanny Murrell, 2/8/96). The targeting of African American communities for the infiltration of crack seemed to provide evidence to support a belief that genocide may be a long term goal.

In her discussion on "Growing away from addiction", bell hooks (1993) stated that "...addictions have become a dangerous threat to our survival as a people (p. 67)". She cited contributing factors including: the role of the dominant society in oppression; the socialization of Black women to assume the role of omnipotent care giver; the connection to the desire to experience pleasure and escape pain; and the assumption that it was not a problem if anti-social behavior was not exhibited. The politics behind illegal drug use in this country has likely been a factor in the continuing problem (Morales, 1989).

Although legal substances such as alcohol and tobacco are more socially accepted and more frequently used than crack, the public media seems to more closely scrutinize the harmful effects of illicit

substances. A review of recent medical literature has demonstrated an increased attention to crack use during pregnancy, possibly as a result of public media attention and funding availability from governmental research resources. Many women who use crack are also using alcohol and tobacco. Polysubstance exposure can compound the harmful effects on women and their fetuses. Finally, crack use is not limited to African Americans (SAMHSA, 1995 & 1996), yet this is the public perception (Kandall, 1996).

The media attention has contributed to the public's fear of a future generation of "crack babies" as unsalvageable. Women, especially African American women, have been the target of this public media attention. Negatively slanted reports perpetuate their social stigmatization and victimization. The perceived risk for harm, especially to the unborn fetus, the fear of drug related gang violence with it's increased incidence of morbidity and mortality among African American youth, and the seemingly "epidemic" nature of crack in poor, urban African American communities warrants a further look at the nature of its use among pregnant women and new mothers. It is also important to understand the interrelationships of substance use, personal resources and demands and health factors, and the social environment as a dynamic construct over time.

Crack cocaine use was chosen as a model for understanding the multiple personal and social factors in developing therapeutic interactions for substance abusing women. Women are motivated for recovery during their pregnancies, therefore pregnancy offers an opportunity for health care providers to have an impact on health promotion during this time. The social environment, which includes health care providers, may have a powerful influence on healthy

parenting and healthy children. Crack cocaine as it relates to the woman's personal, social, and health factors will be addressed.

<div align="center">

Prevalence

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Prevalence data will be summarized here and further detailed in the literature review. The 1995 National Household Survey Estimates on Drug Abuse (SAMHSA, 1996) reported that 22.7% of women ages 18-25 and 10.6% of women ages 26-34 reported that they used illicit drugs within the past year. Overall, 9.3% of White women, 5.9% of Hispanic women, and 7.7% of Black women used illicit substances in the previous year. With the exception of women ages 18-25, this represented a decrease in illicit substance use in the previous year compared to the 1994 data (SAMHSA, 1995). In 1994, 22% of women ages 18-25 used illicit substances in the previous year. Women who lived in the Western Region of the United States were more likely to use illicit substances than in other regions. Large urban inner cities have been targeted as especially vulnerable to substance abuse.

In 1988, Frank, Zuckerman, and Amaro stated that an "epidemic number of babies" were born to crack using women in the United States. They reported that 17% of all infants in their study of adolescent mothers at Boston City Clinic were exposed to intrauterine cocaine at least once. Pregnant adolescent drug users in this population were more likely to be African American and involved with a father of the baby who was also using drugs. The results demonstrated the geographic nature of the problem and targeted young urban African American women as a group at risk.

Several authors cite an overall lifetime rate of all forms of cocaine use averaging approximately 10% in the general United States population (Adams, Eyler, & Behnke, 1990; Amaro, et al., 1990; Kronstadt, 1989; Lindenberg, Alexander, Gendrop, Nencioli, & Williams,

1991). Current cocaine use has remained highly correlated with educational and employment status (higher use rates among less educated and less economically privileged populations) (SAMHSA, 1995 & 1996). Fifty-nine percent of all current cocaine users in the SAMHSA data were White (male and female). However, there were higher rates of cocaine use in Black female populations (1.3%) compared with Hispanics (1.1%) and Whites (0.5%). These data were based on U.S. population sizes of 158 million Whites, 23 million Blacks, 18.5 million Hispanic, and eight million "Others" (NIDA, 1994).

Most of the medical literature has focused on the prevalence of use and cost of care studies, using mostly retrospective data. For example, Chasnoff, Landress, & Barrett (1990) reported a 14.8% overall prevalence of positive urine toxicology screens at the first prenatal visit for 715 women attending both private offices and public clinics in Florida. Public clinic participants included 198 Non-Hispanic white, 168 Black, 3 Hispanic, and 11 Asian women. Private obstetrical participants included 499 Non-Hispanic white, 199 Black, 3 Hispanic, and 14 Asian women. Urine was tested for alcohol, opiate, cocaine, and cannabinoids. Cocaine metabolites were present in 3.4% of the sample population. The majority of cocaine positive women were Blacks (65%) in this study.

Vega, Kolody, Hwang, & Noble (1993) cited an overall prevalence rate of 11.4% positive urine toxicology screens for any drug including alcohol in women at the time of delivery in a large random statewide sample in California (n = 29,494). The prevalence of cocaine use was .06% for Asian women, .55% for Hispanic women, .6% for White women, and .2% for "Other" groups. Black women had a prevalence rate for cocaine use of 7.79%. Another 1.78% of cocaine users were unidentifiable by race. Receiving little or no prenatal care was associated with a higher prevalence estimate for any drug use.

Data from Vega and colleagues were also analyzed according to site specific settings. The university based hospital used for this study demonstrated a two-fold increase in cocaine use among pregnant women. An overall prevalence of 13.88% for positive toxicology for any substance was also reported at this site.

These studies demonstrate important issues in the prevalence studies of substance abuse in pregnancy: (a) more than 10% of the pregnant population exposed themselves and their fetuses to potentially harmful licit and illicit substances; (b) among women in the United States, crack use seems the most prevalent among Black women; and (c) there seems to be a higher report of positive toxicology earlier in pregnancy when compared with results at the time of birth. These are disturbing findings if women are using harmful substances more frequently during organogenesis of their fetuses. The finding also provides hope that women reduce or eliminate the use of substances as their pregnancies progress. A better understanding of health factors, personal resources and demands, and the social environment of women who use crack cocaine in pregnancy and motherhood is necessary for the development of effective addiction treatment approaches.

CHAPTER II: THE RESEARCH LITERATURE

A summary of the relevant literature will be presented followed by a critique of specific studies related to the research concepts. Much of the medical and psychological scientific work on substance abuse and women to date has involved a) prevalence studies (NIDA, 1994; and Vega, et al., 1993) and investigations of teratogenic effects on the fetus (Chasnoff, 1988; Chasnoff, et al., 1990); b) psychosocial and health correlates of addiction (Avants, 1993; Batki, 1990; Batson, Brown, Zaballero, Chu, & Alterman, 1993; Bresnahan, Zuckerman, & Brown, 1992; Burns, Melamed, Burns, Chasnoff, & Hatcher, 1985; Lesswing & Dougherty, 1993; O'Connor & Berry, 1990; Rosenthal, Edwards, Ackerman, Knott, & Rosenthal, 1990; Woods, Lentz, Mitchell, & Oakley, 1994); and c) treatment and relapse prevention studies and articles (Agosti, Nunes, Stewart, & Quitkin, 1991; Brown, Seraganian, & Tremblay, 1993; Carroll, Rounsaville, & Keller, 1991; Finklestein, 1993; McLellan, Lugorsky, Woody, O'Brien, & Druley, 1983; NIDA, 1997; Reed, 1987; Wallace, 1989 & 1990; Washton & Washton, 1990). Conclusions from these studies suggest the following:

1. Although there is medical evidence of the harmful effects of substance abuse to mothers and their babies, such as premature labor and low birth weight, these effects can be mediated by other factors such as socioeconomic and environmental conditions.

2. Although there is evidence that psychological factors such as depression and dual diagnosis influence substance abuse, these effects can be mediated by other factors such as pregnancy and birth experiences and the personal resources of the woman.

3. There is evidence that social factors such as violence, poverty, class, the quality of interpersonal relationships, and the social resources in the environment influence substance abuse in women.

4. Racial differences exist in the types of substances used.

5. Risk to the fetus and offspring of addicted women has been a primary motivator for studying addiction in women, rather than the health risks and psychological correlates of the women themselves.

6. Retaining drug dependent women in treatment and recovery programs may depend on the ability of therapeutic services to address the multiple individual needs of the women who use these programs.

Health factors, personal resources and demands, and the social environment have been identified as important factors for understanding crack cocaine use in pregnant women and new mothers and were chosen for investigation in this study. There has been substantial literature addressing these issues.

<div align="center">Health Factors - The Physical Health Risks</div>

When crack is used during pregnancy, there is a presumed risk to both mother and fetus. Abruptio placentae, low birth weight and premature babies, congenital defects (genitourinary and cardiac organ malformation), neurological impairment (electrocardiographic abnormalities, and cerebral vascular accidents), and behavioral and neurodevelopmental problems from the neonatal period through school age, are a few of the potential risks (Chasnoff, 1988; Kronstadt, 1989; Kennard, 1990; Petitti & Coleman, 1990; Lindenberg, et al. 1991; McCalla, et al., 1991; Sturner, Sweeney, Callery, & Haley, 1991). Chasnoff and colleagues (1989), Hawley & Disney (1992), and Black and colleagues (1993), have also addressed the neurobehavioral sequelae for cocaine exposed infants including impaired behavioral state and autonomic regulation in the first six weeks of life.

Consistent documentation of cocaine related infant health problems is nonexistent. Morbidity and mortality studies are inconclusive. Some experts have addressed the possible long term physical and behavioral problems for cocaine exposed infants and children e.g. motor impairment and attention deficit disorder (Chasnoff, et al, 1989; Hawley & Disney, 1992; Black, et al., 1993). However, unlike Fetal Alcohol Syndrome (FAS), there is no absolute "Cocaine Syndrome". Severity of illness may be influenced more by dose, polysubstance abuse, poor nutrition, maternal chronic illness, the effects of poverty and environmental conditions such as lack of medical care and poor housing, and infant gestational age at birth than by cocaine use alone.

Sexual practices that include multiple partners, prostitution, and lack of protection with condoms are associated with crack use (Carlson & Siegal, 1991). These behaviors place women at high risk for unintended pregnancies and sexually transmitted infections (STIs) such as syphilis, gonorrhea, herpes, and human immunodeficiency virus (HIV).

A major health concern is the increasing rate of HIV infection among women (Lindsay, et al., 1992). Lindsay and associates reported that the number of AIDS cases in the United States was increasing more rapidly among women than men. The prevalence of HIV infection is disproportionately higher among Black women when compared with other women. AIDS is currently the leading cause of death among 15-44 year old Black women especially in large urban areas in the United States.

Lindsay and colleagues (1992) studied the relationship between crack use and HIV infection among inner city pregnant women. Of 13,469 pregnant women who were screened for HIV over an 18 month period, 80 were positive for the antibody. Seventy-nine women completed the risk behavior questionnaire. While controlling for other HIV risk factors, they found that seropositivity was associated with crack use (Odds Ratio

= 2.3). They also found that unemployed women who used crack were 3.5 times more likely to be HIV infected than were employed women. Eighty-seven percent of their study population were Black, the remainder were White. The evidence seems to indicate that poor Black women in urban areas who are impoverished are at highest risk of using crack and developing health problems including HIV infection. The mechanism behind this is related to high risk sexual contacts for money or substances.

Studies have focused on health dimensions by reporting the dangers of cocaine use to the pregnant woman, her fetus, and the developing child. Few studies prior to the 1990's had investigated psychosocial and environmental factors in substance abuse and recovery as it related to pregnancy and motherhood.

Personal Resources and Demands

During the initial phases of this study, personal resources and demands were defined in terms of depression and well-being and either high or low self-esteem. It was thought that these states of being could affect how support was viewed and utilized and were therefore important to measure. It was also hoped that other personal resources and demands would emerge from the interview data if they existed.

Depression As A Key Variable

Depressive symptoms have surfaced consistently as a key variable in understanding addiction in women (Burns, et al., 1985; Beckman & Amaro, 1986; Zuckerman, et al., 1989; Buckner & Mandell, 1990; Degen, et al., 1993). Hanna, Faden, & Dufour (1994) found that depressed women were less likely to reduce their cocaine use than non-depressed women ($p < .001$).

Burns and colleagues (1985) studied depression among 54 chemically dependent pregnant women who entered a perinatal addiction project in Chicago using a cross-sectional design. The Beck Depression Inventory

(BDI) measured depression; a high incidence was found in women ages 17-
36 with older women being the most depressed. Opiate abuse was the
presenting problem for 81% of the women. There was no identification of
pregnancy gestations for the women in this study. Pregnancy gestation
may be an important factor in the existence of depression because
pregnancy complaints such as sleep alterations and fatigue are also
indicators of depression. There was also no attempt to distinguish
between opiate, alcohol, and non-opiate use and the level of depression,
when it is clearly possible that type of substances used or eliminated
may influence depression scores. For example, Brown and Schuckit (1988)
found a significant difference in measures of depression depending on
when 191 male alcoholics were given the screening test. Within 48 hours
of admission to a treatment program, 42% of the sample demonstrated
clinical levels of depression. By four weeks into treatment, only six
percent remained clinically depressed. Schuckit (1995) also described
the existence of high rates of depressive symptoms in both men and women
withdrawing from stimulants such as cocaine. These atypical depressions
involved severe mood, sleep, and appetite impairment for weeks to months
following stimulant cessation.

Zuckerman and associates (1989) used a longitudinal, observational
design to measure correlates of depression among 1014 poor pregnant
women who were recruited from a Boston city hospital prenatal clinic.
Information about the Boston community in general was not available.
Seventy-four percent of the sample were Black, 18% Hispanic, and 8%
White. It seems unlikely that the sample population in this study
represented the Boston population.

Bivariate analyses were conducted. Depression (CES-D) was
associated with higher levels of stress (LES), p < .001, less social
support (NSSQ), p <. 001, poor weight gain, p < .01, and substance abuse

including tobacco, p < .001, alcohol, p < .001, and cocaine, p < .05. Although depression was associated with drug use, causality between these variables could not be determined. The authors, however, concluded that among women living in poverty, stresses from the environment may aggravate depressive symptoms and health outcomes for women and their newborns.

Degen and colleagues (1993) conducted a cross-sectional study of 80 pregnant women who had completed at least 20 weeks of pregnancy. The majority of the women were African American (74%) and single or divorced (80%). Thirty-six percent did not complete high school and 27% relied on public assistance.

They studied the relationship between anxiety and social support in low-income pregnant women and compared drug users with non-users. There was an 80 percent polysubstance abuse rate among drug users. The majority of women were African American, single, and less likely to have been raised in a two parent household. The investigators found that feelings of depression increased as perceptions of social support decreased for both groups, p = .004, and that drug users had lower self-esteem than nonusers, p = .001. Increased parity, drug abuse, and low socioeconomic status was associated with low self-esteem and explained 22% of the variance in the regression model. Pellham (1993) has also found that self-esteem is highly inversely correlated with depression.

Using measures of depressive symptoms as a method of determining depression is problematic, especially in a pregnant population where many of the normal somatic complaints of pregnancy are highly correlated with depressive symptoms (Affonso & Domino, 1984; Kaplan, 1986) and can even be categorized as depressive symptoms. For example, more than half of the 21 symptoms and attitudes on the Beck Depression Inventory (BDI) (Beck, Steer, & Garbin, 1988) include factors commonly associated with

discomforts of pregnancy. Distinguishing between transient pregnancy and postpartum depression and underlying pre-existing psychiatric disorder is difficult. Compounding this further, there is evidence that women suffering from addictive disease may also have coexisting psychiatric disorders and be classified as having a dual diagnosis (Batson, Brown, Zaballero, Chu, & Alterman, 1993; Dougherty & Lesswing, 1989; Ford, Hillard, Giesler, Lassen, & Thomas, 1989; NIDA, 1991).

<div align="center">Self-esteem</div>

Self-esteem has also been identified as an important variable for pregnant women who use drugs. Degen and associates (1993) reported that pregnant drug users had lower self-esteem than pregnant non-drug users (p=.001). Unrelated to drug or alcohol treatment, Hudson (1982) and Pellham (1993) identified depression and self-esteem as covariants in studies of treatment effectiveness. Tice (1993) stated that people with low self-esteem desire success, love, and admiration but that these goals seem out of reach. The first goal of people with low self-esteem is to avoid failure, humiliation, and rejection. Women who use substances in pregnancy may have a difficult time avoiding feelings of failure, humiliation, and rejection because of their lifestyle. They may also use drugs to cope with these feelings.

Depression and self-esteem seem to be important variables for pregnant and postpartum women who use drugs. These two factors are also likely to affect how women interact with their social environment.

<div align="center">Social Environment Factors</div>

The social environment encompasses (a) the personal network, (b) provided, perceived, and exchanged social support, and (c) the physical environment within which these network transactions occur. The personal resources and demands such as depression and well-being and either high or low self-esteem, interact with the social environment. Health factors

can also influence the use and perception of social environment. And on a macro level, the personal factors and the social environment interacts with the political and economic environment of society. The social environment as it relates to drug use has become a topic of interest and study. Several authors have addressed the importance of the relationship between the social environment and chemical abuse and recovery (Carlson & Siegal, 1991; Degen, et al., 1993; Dumas, 1992; Gainey, Wells, Hawkins, & Catalano, 1993; Hanna, Faden, & Dugour, 1994; Hawkins, Catalano, & Miller, 1992; McLellan, Luborsky, Woody, O'Brien, Druley, 1983; Wallace, 1989, 1990; Washton & Washton, 1990).

Social Support and the Network

There is evidence that social support is influential in both the addiction and recovery process in both positive and negative ways (Beattie, Longabaugh, Elliott, Stout, Fava, & Noel, 1993; Booth, Russell, Soucek, & Laughlin, 1992; Smith & Frawley, 1993). For example, in a longitudinal study of smoking cessation, partners of successful abstainers were more reinforcing and less punishing of the smokers' efforts than were the partners of subjects who had relapsed (Mermelstein, Lichtenstein, & McIntyre, 1983).

Zapka, Stoddard, and McCusker (1993) conducted an intervention study among male injection drug users within six days of admission to a treatment program and at three, six, and twelve months after admission. They reported that improved drug use behavior was related to decreasing the number of injecting friends in the network, increasing the number of people to talk to when upset, and increasing the ability to argue about safe drug use.

The support of the social network has been studied as an important predictor for recovery. In terms of the recovery process, it appears that abstinence is related to the number of support sources used, e.g.

Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and family (Johnsen & Herringer, 1992). Treatment outcomes may be associated with diverse aspects of the social network, e.g. family, friends, co-workers, or continued association with drinking buddies (Gordon & Zrull, 1991). Gainey and associates (1993) found that living alone and use of multiple substances prior to treatment were powerful predictors of early attrition from a cocaine treatment program. They also found that living with others and being legally required to participate in a treatment program predicted retention in a program. The investigators did not address whether or not long term retention was associated with drug abstinence.

Norbeck & Anderson (1989) reported that high social support was associated with substance use in low-income pregnant White women, $p=.03$, and indicated that the social network might reinforce negative health practices for this group. This study was key in questioning the discrepancy between high support and poor health behaviors in pregnant women. The possibility that women could perceive high support, yet practice poor health behaviors underscored the belief that not all support is associated with positive health practices. This makes intuitive sense in an addicted population. Women who were raised in addicted, abusive, and violent families may experience support differently from women who were raised in non-addictive, non-abusive, and/or non-violent families.

Dumas (1992) addressed the differences in the gender and cultural experiences of inner city women where poverty was a complicating factor. She used case histories to demonstrate that recovery could not occur in isolation from support systems and recovery was to be viewed as a lifelong process.

There is evidence that gender is a factor in the relationship between social support and drug use. For example, the absence of social support is associated with the use of non-social strategies for women e.g. substance abuse, sleeping more, and potentially health-damaging coping strategies e.g. taking out frustrations on the kids (Tucker, 1982). Also, women are more likely to use substances in their intimate relationships if their partners also use substances (Boyd & Mast, 1983). Henderson, Boyd & Mieczkowski (1994) found that relationships were a prominent aspect of crack use for women where women were more likely to begin and maintain their drug use within the context of intimate sexual relationships.

Women have also been reported to value their relationships with their mothers and daughters as support people (Boyd & Mieczkowski, 1990). Of 23 women (93% Black) in a drug treatment program, 30% of the women named their mothers and another 30% named their daughters as their most important relationship. Eighty-seven percent of the women said that these support people did not use drugs, themselves, but knew of their own drug use. When asked who could help them get off of drugs, 22% of the women said friends, 17% said mothers, and 17% said sisters.

Among women who use substances, it is reported that there is a greater likelihood of involvement with partners who also use substances (Boyd & Mast, 1983; Carlson & Siegal, 1991). Bresnahan and associates (1992) found that the women who reported being in relationships with substance abusing partners were five times more likely to use substances themselves than women who were with non-using partners. Both groups of women perceived their support similarly, however, women with substance abusing partners seemed to be positively supported to use drugs themselves.

Deficiencies in positive social support networks and negative life events among women who are addicted to crack cocaine have been addressed by several researchers and experts (Black, et al., 1993; Bresnahan, et al., 1992; Brownell, et al., 1986; Buckner & Mandell, 1990; Degen, et al., 1993; Fawzy, et al., 1983; Myers & Brown, 1990; Reed, 1987; Wildwind, 1984; Zuckerman, et al., 1989). These researchers have concluded that women who use drugs are often in relationships with partners who use drugs, that poverty and depression complicate the drug use problem, and that the social environment is an important factor in drug use, recovery, and the growth and development of the child.

The social environment after the baby is born may be stronger predictor of the future development in a cocaine exposed child than the actual intrauterine environment (Black, et al., 1993; Myers, Olson, & Kaltenbach, 1992; Scherling, 1994). Black and associates (1993) tested the relationships between prenatal drug exposure, neurodevelopment, and parental environment by comparing 40 drug exposed and non-drug exposed mother-infant pairs. The majority of women were single (95% drug exposed; 90% comparison) and African American (85% drug exposed; 90% comparison). Comparisons were made at two and three days after delivery and at weeks two, four, and six after delivery. They found that drug exposed babies displayed less optimal neurodevelopment than comparison babies at birth. However, by two and six weeks both groups were similar with the exception of autonomic regulation problems for the drug exposed babies. Most interestingly, the neurodevelopmental performance was positively related to the quality of the parenting environment which was defined in terms of the amount and quality of interactions and the affection that the mothers gave their children. This study offers hope that cocaine-exposed children can develop normally given a nurturing environment.

<u>Family</u>

It appears that the social support literature describes predominately <u>family</u> support. Social support in pregnancy and new motherhood among women who were not identified as drug users was studied extensively in the 70's and 80's. (Entwisle & Doering, 1981; Grossman, Eichler, & Winickoff, 1980; Hees-Stauthamer, 1985; Lederman, 1984; Leifer, 1980; Mayberry & Affonso, 1993; Mercer, 1986; Rubin, 1984; Shereshefsky & Yarrow, 1973; Stern and Kruckman, 1983; Ventura, 1982, 1986, 1987).

The two most important support figures for pregnant women and new mothers reported in this literature are their mothers (Chodorow, 1978; Coleman & Coleman, 1971; Deutch, 1945; Fischer, 1981; Martell, 1990; Shereshefsky & Yarrow, 1973) and/or their (male) partners (Cronenwett & Kunst-Wilson, 1981; Cronenwett, 1985; Entwisle & Doering, 1981; Grossman, et al., 1980; Hees-Stauthamer, 1985; Mercer, 1986; O'Hara, 1986; Shereshefsky & Yarrow, 1973). Both individuals have been reported to influence (a) pregnancy and birth health outcomes, (b) psychological correlates such as self-esteem, anxiety, depression, and sense of well-being, and (c) maternal role attainment in the lives of the pregnant and postpartum women.

For Black low-income pregnant women, mothers and partners appear to demonstrate the most significant effects on health outcomes for pregnancy no matter how large the network or how much support is received from other network members (Norbeck & Anderson, 1989). This confirms the work of bell hooks (1993), who described the importance of family ties in the African American culture.

But not all partners are loving, caring, and nurturing and the family may be a source of stress and conflict. Amaro and colleagues (1990) found a higher incidence of domestic violence among women who had

substance using partners. Of 1,243 poor, urban, minority pregnant women, seven percent were victims of violence. When confounders were controlled, the woman's alcohol use and her partner's drug use were independently associated with an increased risk of violence. Thus, in relationships where there is substance abuse, there is a risk for violence.

Many of the measures of social support and addiction are conducted among family members with the partner and the family of origin being the most frequently investigated. The family of origin as a root cause of chemical abuse especially as it relates to the family cycle of addiction (Wallace, 1990) and family interactions have received attention in the literature. For example, Costantini, Wermuth, Sorensen, and Lyons (1992) measured (a) cohesion or "emotional bonding" between family members and (b) adaptability of the family system to change its power or role relationships and/or rules in response to specific situations. Lower levels of cohesion predicted higher levels of drug use (r = -.435), greater psychological problems (r = -.451), and greater family problems (r = -.616) with p < .05.

Children can be powerful motivators for women in recovery. Marsha Rosenbaum (1981), a sociologist, was an early investigator who studied the lives of heroin addicted women. She identified the importance of relationships with children as either exacerbating or mediating the use of substances when women attempted to juggle their drug use with their mothering responsibilities.

Kearney and associates (1994) described the experiences of pregnancy and mothering for women who used crack. They reported that contrary to popular beliefs, women who used crack were concerned about their children. Mothers felt responsible for and proud of their children. The women, in placing their children's needs ahead of their

own addiction needs, were taking steps to reduce or eliminate their substance use. For women whose children were not with them or removed from their custody, drug use intensified as a coping mechanism. In this context, children may be viewed as motivational and influential persons in the recovery process.

Hanna and colleagues (1994) reported that most pregnant women reduced their use of harmful substances after learning of their pregnancies. However, women with negative attitudes toward pregnancy and depressed women made significantly smaller changes in their use of cocaine. Depressed Black women were at greater risk for heavier cocaine use in pregnancy than their less depressed counterparts or depressed White women, $p < .0001$.

Physical Environment and Other Social Support Factors

Matching specific types of support to different conditions (Cohen & Syme, 1985; Cutrona & Russell, 1987), timing (Jacobson, 1986), religiosity (Grossman, et al., 1980), racism (Edwards, et al., 1994), and physical environment (Edwards, et al., 1994; Marlatt & Gordon, 1985; McAuliffe, W., Albert, J., Cordill-London, G., & McGarraghy, T. K., 1991) may also be important factors in the perception of support and health outcomes. Using a semi-structured interview format, Wallace (1989) interviewed 35 individuals who had relapsed from a treatment program for crack use. Twenty-six of the participants were Black men, and seven were Black women. She found that approximately 34% of relapse episodes involved environmental factors, defined as stimuli associated with drug use e.g. people, places, and drugs, that acted as external cues to evoke conditioned responses of drug use.

In conclusion, the social environment is a construct that offers potential for researchers who want to investigate crack cocaine use among pregnant women and new mothers. Many questions arise from the lack

of information in this area. While it is generally accepted that social support can provide both direct and moderating effects on health outcomes, much work is still needed in the area of matching support with specific outcome, e.g. what types of support best predict substance use and recovery in pregnant and postpartum women who use crack? Are mother and partner support the best predictors of maternal and neonatal outcomes? Or do children and other network members also influence drug use? If the network structure of pregnant and postpartum substance users change, does the pregnant and postpartum user change her substance use?

The connections between environmental factors and social support for pregnant women and new mothers who use crack is also not well defined. External socio-political factors may have a profound influence. For example, how does living in a neighborhood where crack is sold and used determine the make-up of the social network, the type of support received, and the continued use or abstinence from substances in women during their pregnancy and early mothering experiences? Also, how does job availability and training, affordable child care, and affordable housing determine drug use and abstinence?

Finally, the longitudinal perspective is often missing in studies on addiction, support, and motherhood. Do social networks look different among recovering women who are successful abstainers versus women who relapse? How do social networks change and how do they remain the same over time for women who use substances while they are pregnant? How is it that women can perceive high support, yet actively use substances; is it that they are being positively supported for unhealthy behaviors? It is a glaring assumption that social support positively correlates with good health practices and good health outcomes.

Brownell and associates (1986) presented an article about understanding and preventing relapse to addiction. They stated that

combinations of physiological, psychological, social, and environmental factors may have varied effects on different individuals and that different processes may govern the initiation, maintenance, and recovery from addiction. Emotional states, motivation, coping, genetics, social support, and environmental stimuli all play a role as well as class, economic status, gender, race, and spirituality. The study of these factors as they relate to substance use and abstinence in pregnant women and new mothers is a complex undertaking. Understanding these factors offers the potential of fulfilling the ultimate goal of breaking the chain of addiction through appropriate therapeutic services geared toward the needs of women, their children, and their families.

<center>Critique of the Relevant Literature:</center>

<center>Pregnancy and Motherhood, Substance Use, and Social Support</center>

A review of the literature about variables related to pregnancy and motherhood, substance use, and social support is presented in the next section as a basis for an analysis of methodological issues and gaps in the knowledge base. Of the 14 papers reviewed (Black, et al., 1993; Bresnahan, et al., 1992; Degen, et al., 1993; Dumas, 1992; Hanna, et al., 1994; Kearney, Irwin & Murphy, 1992; Kearney, et al., 1994; Marcenko, Seraydarian, Huang, & Rohwederet, 1992; Norbeck & Anderson, 1989; Seguin, et al., 1995; Smith, et al., 1992; Stephens, 1985; Sydsjo, 1992; Zuckerman, et al, 1989), the two studies by Kearney and associates (1992; 1994) are derived from one population and the two studies conducted by Zuckerman's group (1989; 1992) are derived from one population.

<center>How the Population Is Studied</center>

Dimensions of Person and Social Environment - Variables and Instruments

There were a variety of ways the variables of interest were measured. Some designs described an outcome variable; these varied among

studies. Outcome variables included (a) pregnancy and birth outcomes (Norbeck & Anderson, 1989; Sydsjo, 1992), (b) neonatal outcomes e.g. birth weight, gestational age at birth, babies who stayed in the nursery after their mothers had gone home from the hospital, and neurodevelopment (Black, et al., 1993; Degen, et al., 1993; Hanna, et al., 1994; Norbeck & Anderson, 1989; Seguin, et al., 1995; Sydsjo, 1992), (c) substance use (Bresnahan, et al., 1992; Kearney, et al., 1992; Smith, et al., 1992; Stephens, 1985), and (d) psychosocial factors e.g. depression, psychiatric symptoms, socioeconomic status, social support and anxiety (Black, et al, 1993; Seguin, et al, 1995; Smith, et al., 1992; Zuckerman, et al, 1989). Variables were measured using paper and pencil questionnaires and standardized instruments such as the Addiction Severity Index (ASI) or the Norbeck Social Support Questionnaire (NSSQ).

Pregnancy and Motherhood As a Variable

Pregnancy and/or motherhood within the first year was an independent variable in almost all of the studies and the majority of the participants were pregnant or newly delivered mothers. There were two exceptions. Black and colleagues (1993) studied parent nurturance, measured by the Parent Child Early Relational Assessment (PCERA) and child-centered quality of the home environment, measured by the Home Observation for Measure of Environment (HOME) through six weeks after birth. Kearney and associates (1994) studied how women managed motherhood while using crack cocaine through the use of a semi-structured interview.

Pregnancy, birth, and neonatal complications were measured in six studies (Black, et al., 1993; Marcenko, et al., 1992; Norbeck & Anderson, 1989; Seguin, et al., 1995; Sydsjo, 1992; Zuckerman, et al., 1989). Correlations were made between complications and other measured

variables e.g. social support and depression. Psychosocial indicators of pregnancy such as attitude toward pregnancy, nurturance, pregnancy and parenting stress, and use of prenatal care were used in six studies (Black, et al., 1993; Degen, et al., 1993; Hanna, et al., 1994; Kearney, et al., 1992; Kearney, et al., 1994; Zuckerman, et al., 1989).

One problem with comparing results in these studies is the wide range of indicators used for "pregnancy" and "motherhood" e.g. early pregnancy, late pregnancy, birth, motherhood with children ages birth through school aged. In some cases, these indicators were not defined (Bresnahan, et al., 1992; Degen, et al., 1993; Kearney, et al., 1992; Zuckerman, et al., 1989) or in the case of Hanna and associates (1994), recall of substance use prior to and during pregnancy was requested at 16-19 months after delivery.

Substance Use As a Variable

Substance use as a health outcome was the dependent variable in five of the studies (Bresnahan, et al., 1992; Degen, et al., 1993; Hanna, et al., 1994; Smith, et al., 1992; Stephens, 1985) and an independent variable in the remainder. Many different terms were used to describe substance use, yet criteria to differentiate between substance use, abuse, and dependence were not addressed in any of the studies. Terms used to describe substance exposure included: drug exposed, substance use, substance abuse, poly-drug abuse, addicted, drug users, drug abusers, and alcoholics. Types of substances used also varied and included polysubstance use. Two researchers (Seguin, 1995; Sydsjo, 1992) did not define which substances were included in their substance using populations.

Substance use was measured as (a) self-report alone (Dumas, 1992; Hanna, et al., 1994; Kearney, et al., 1992; Kearney, et al., 1994; Norbeck & Anderson, 1989; Stephens, 1985; Sydsjo, 1992), (b) self-report

in combination with urine toxicology (Bresnahan, et al., 1992; Zuckerman, et al., 1989), (c) the results of standardized instrumentation e.g. ASI (Smith, et al., 1992), and (d) medical record review (Marcenko, et al., 1992; Seguin, et al., 1995). Black and colleagues (1993) and Degen and colleagues (1993) used self-report, urine toxicology, and medical record review to identify substance use. Unfortunately, medical records, even with standardized forms, vary in completeness and depends upon the person who is entering the data.

Using multiple indicators to identify substance use can improve the identification of substance exposed pregnant women (Frank, et al, 1988). Norbeck and Anderson (1989) specifically excluded intravenous drug abusers, prolonged narcotic users, and methadone treated individuals from their sample. Differences in outcomes between this group and the study group were not analyzed, yet it seems that these differences are important to understand. Evaluations of substance users and their social support and health outcomes was a gap with this study.

Smith and associates (1992) were the only group to establish reliability and validity estimates for substance use or abuse measurement using the Addiction Severity Index (ASI) (McLellan, et al., 1983). The ASI is a 40 minute interview instrument measuring seven problem areas commonly experienced by substance abusers (McLellan, Luborsky, & Cacciola, 1985). These seven domains include health status or medical conditions, employment, alcohol use, drug use, illegal involvement, family & social relations, and psychiatric status. The ASI attempts to identify addicts based on the severity of their substance abuse and addiction related problems.

Concurrent reliability was calculated using the Spearman-Brown formula. The internal consistency reliability estimates of the total ASI was reported as coefficient alpha = .83 to .91. Subscale estimates for

the seven domains were also calculated with alphas for medical status

(.83 to .93); employment (.74 to .89); alcohol (.75 to .91); drug (.70

to .96); legal (.74 to .93); family/social (.80 to .94); and psychiatric

(.79 to .96). Reliability coefficients of less than .80 were reported

for females in the legal (.74) and employment (.77) subscales. The

employment subscale alpha coefficients were also below .80 for Whites

(.76) and people younger than 30 (.74), but above .80 for Blacks (.89)

and people older than 30 (.81). Test-retest reliability coefficients

were reported (.92 or greater).

The ASI was designed for use as an interview and not as a self-

administered questionnaire. Reliability of the instrument drops to .74

in phone interviews and .55 when the information is presented in written

form (McLellan, et al., 1985). Smith and associates (1992) used trained

interviewers in their study but did not report how the interviews were

conducted.

Validity for each of the subscales were measured against a battery

of reliable and valid instruments. McLellan and colleagues (1985)

reported that the domains employment, alcohol use, drug use, and legal

status correlated well with other instruments, but that the medical,

psychiatric, and family/social domains did not perform as well. McLellan

and associates still proposed that these domains were acceptable when

used to determine the existence of an individual domain and not

necessarily the severity and that it was the cumulative effect of having

problems in multiple domains that determined the severity of the

addiction.

Dumas' (1992) case study and Smith and colleagues (1992)

comparison of treated and untreated pregnant and postpartum cocaine

abusing women were the only studies to use the term "addicted". However,

Smith and associates (1992) used the term "addict" in their review of

the literature. They refrained from using the term to describe their population even though all of the women in the comparison group were chosen from a drug treatment program which implies addiction.

The research literature often fails to make the distinction between addicts and users. Conceptually there is a difference between an addict and a user. Addiction implies the disease process. The term "use" is inclusive of any use at all ranging from minimal to addictive type use. In order to determine the relationships between "use" and health outcomes, methods to determine the intensity of use are needed. Therefore it is important to quantify a continuation of drug involvement from casual use to heavy use. The lack of differentiation between substance use and addiction makes cross-comparisons of studies about substance use difficult.

Social Support As a Variable

Social support has been measured in selected populations of pregnant women and new mothers who used drugs and alcohol (a) standardized instruments e.g. NSSQ (for 3 studies), ASI subscale, Family Support Scale, Social Provisions Scale (SPS), the Interpersonal Support Evaluation List (ISEL), or Barrera's Arizona Social Support Interview Schedule (ASSI) Schedule, and Social Support Unavailability Scale, (b) self-report interviews (qualitative data), and (c) social indicators (homelessness or being married). There is evidence that specific people and different types of social support are involved with substance use and maternal/infant health outcomes including depression for women and neurodevelopmental behavior for babies. For example, in a sample of predominantly low-income Black women, loss of the baby's father was associated with higher alcohol consumption prior to and during pregnancy and was a significant independent contributor to the variance of alcohol

consumption (Stephens, 1985). When women had pregnancy support, they decreased their substance use.

Norbeck and Anderson (1989) found that partner and mother were key sources of social support for low-income Black women, explaining about 33% of the variance in pregnancy outcomes. For low-income White women, high support from mothers was related to more drug use and pregnancy complications, explaining about 22% of the variance. Support from friends was positively related to drug use in late pregnancy. Support from friends explained 6.2% of the variance in self-reported substance use.

Bresnahan and associates (1992) found that women with substance using partners were nearly five times more likely to be substance users themselves when compared with women who did not report substance use by a partner. Degen and colleagues (1993) found that drug abusers were less likely to have grown up in two-parent homes and there were no differences in desire for pregnancy or maternal feelings between drug users and non-users who received prenatal care. However, women in general, perceived less support if they had more children.

Black and associates (1993) measured support using the Social Provisions Scale (SPS) (Cutrona & Russell, 1987) and the Family Support Scale (FSS) (Dunst, Trivette, & Deal, 1988). The SPS is a 12 item scale used to measured the amount others depended upon the respondents as well as the amount the respondents depended upon others. Two items, one positively worded and one negatively worded, for each of the six subscales measured attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. Studies using the SPS were conducted on large samples of college psychology students and teachers. Coefficient alpha estimates for each of the subscales ranged from .65 to .76. Only the guidance and the attachment

subscales were > .70. Lipsey (1990) stated that for social science measures, reliability scores of .70 or greater were acceptable. The four subscales which were < .70 leaves room for skepticism that the SPS as a whole was a reliable instrument. A total score for support was calculated using the six subscale scores.

The FSS measured the helpfulness of network resources in raising a child using a 20 item list of possible network members and ranking them on helpfulness with 1 being not at all helpful to 5 being extremely helpful. The coefficient alpha was .77.

Black's group reported that drug using women were more likely to report higher levels of support (SPS) than women in the comparison group, p <.03. High SPS scores were associated with high parenting stress but high FSS scores were associated with less parenting stress, explaining 11% of the variance. This discrepancy makes sense when considering that part of the SPS score reflected the individual's provision of support in relationships. The provision of support can be stressful and add to parenting stress. The six subscales of the SPS may also be confounded with the self-esteem and depression of the respondents, while the FSS is rating just the "helpfulness" of network members specifically for child raising and may be tapping into the "tangible aid" component of social support. There is also the question of whether or not the SPS is the most accurate measure of social support for a population of new mothers with a history of substance abuse.

Finally, the neurodevelopmental performance of babies was positively related to the quality of the parenting environment. This study provided evidence that the long term home environment of the child may be more predictive of long term neurodevelopmental problems than the actual fetal exposure to substances.

The social support and social environment variables used the most reliable instruments. These included the NSSQ (Bresnahan, et al., 1992; Norbeck & Anderson, 1989; Zuckerman, et al., 1989), the SPS (Black, et al., 1993), the ISEL (Degen, et al., 1993), and the ASSI (Seguin, et al., 1995). Evidence of reliability and validity were presented in these studies. Other studies used non-standardized pen and paper instruments and did not address reliability and validity issues (Stephens, 1985; Sydsjo, 1992) or studies used variables such as marital status (Hanna, et al., 1994) or homelessness (Marcenko, et al., 1992) as indicators of presence or absence of social support.

Pregnancy and motherhood, substance use, and social support were measured in a variety of ways including self-report, standardized instruments, and medical records. Each method poses threats to reliability and validity. There are also difficulties with the use of non-standardized instruments and indicators in obtaining reliable and valid results.

Reliability and validity issues are a problem in the majority of the studies. First, the reliability estimates for every instrument was fully addressed in only three of the studies (Norbeck & Anderson, 1989; Smith, et al., 1992; Degen, et al., 1993). Without reliable instruments, the validity of the study can be questioned. For example, it is unclear that homelessness can be reliably viewed as an indicator of social support as presented by Marcenko and associates (1992).

Sampling

With the exception of the three qualitative studies (Dumas, 1992; Kearney, Irwin & Murphy, 1992; Kearney, et al., 1994) and Black, et al. (1993) and Marcenko, Seraydarian, Huang, & Rohwederet (1992) which considered mother-infant pairs, sample sizes were large. Most of the studies used convenience sampling. Participants for studies by Kearney

and associates (1992; 1994) were obtained through flyers and snowball referrals. Sydsjo (1992) study used consecutive sampling to study the whole population of pregnant women enrolled in prenatal care for a regional capital city in southeast Sweden. Zuckerman and colleagues (1989) and Bresnahan and colleagues (1992) also used consecutive sampling to obtain their large data set over a three year period from a large metropolitan East Coast city. Hulley & Cummings (1988) stated that of all the non-probability sampling designs, consecutive sampling is the best for most closely simulating populations, especially when data are collected to reflect seasonal factors and changes over time. Convenience sampling poses the threat that the volunteers who participate may not adequately represent the population.

The majority of studies focused on low-income women. Chasnoff, et al. (1990) and Vega, et al. (1993) identified an equal prevalence rate of substance abuse in public and private sector clinics, with differences being in the types of substances abused. With the exceptions of the Sweden (Sydso, 1992) and Quebec (Sequin, et al., 1995) studies, the majority of studies included predominantly Black populations. Even in the two studies that had substantial groups of White women for comparison (Hanna, et al., 1994; Norbeck & Anderson, 1989), there were a disproportionate number of Black women (47% & 28% respectively) when compared with the national population data of 12% Black women and 75% White women in the United States (SAMHSA, 1995). This is especially noteworthy considering that the numbers of White women who use substances during their childbearing years are greater than the numbers of their Black counterparts. The data can only be generalized to low-income Black women, which perpetuates the stereotypical idea that pregnant women and new mothers who use crack are only from this population. The experiences with crack use among women from other racial

groups and middle or upper class women has not been well-explored. Also, the longitudinal factors related to crack use in pregnant women and new mothers has not been well addressed.

Designs

Ten of the studies used correlational analyses. Four were cross-sectional studies (Degen, et al., 1993; Hanna, et al., 1994; Marcenko, et al., 1992; Stephens, 1985) and six were cohort studies (Black, et al., 1993; Bresnahan, et al., 1992; Norbeck & Anderson, 1989; Seguin, et al., 1995; Sydsjo, 1992; Zuckerman, et al., 1989). Three papers used a qualitative design, two reported using grounded theory (Kearney, et al., 1992 & Kearney, et al., 1994) and one using a case study approach (Dumas, 1992). Finally, one study used a quasi-experimental design matching treated and untreated cocaine using women to determine differences in addiction severity and psychiatric symptoms (Smith, et al., 1992).

Cross-sectional designs are well suited to the goal of describing variables and their distribution patterns (Hulley & Cummings, 1988). A criticism common to cross-sectional designs is that they are most useful for finding the prevalence (the percentage of cases at a given time), but not incidence (the rate of new case occurrences) of the variable(s). Another criticism is that the temporal precedence of variables is not established (Cook & Campbell, 1979; Hulley & Cummings, 1988). This is significant because causality is difficult to determine unless the predictor variable is unchangeable (e.g. gender and race).

Cohort studies follow groups over time, either prospectively or retrospectively. Unlike the cross-sectional studies, the incidence of a phenomena can be determined. The time sequence strengthens the inference of causality (Hulley & Cummings, 1988) by observing that the cause preceded the effect (Cook & Cambell, 1979). Criticism of this design

includes the possibility of confounding variables misleading the results (spurious and indirect associations) (Woods & Catalano, 1988). There is also the possibility that the outcome measure may take longer to appear than the design is able to determine. An example of this would be the individual in recovery who relapses in the first year and is not fully abstinent until two years after entry to treatment. Results would depend upon whether or not outcome measures were obtained within the first year or after two years. When an underlying pattern of responses to cues for relapse or recovery are not well understood, then measurement points along a chronological time continuum are indicated to improve understanding.

Five of the studies incorporated measurements at different points of time (Norbeck & Anderson, 1989; Zuckerman, et al., 1989; Bresnahan, et al., 1992; Sydsjo, 1992; Black, et al., 1993). Of these studies, Black and colleagues (1993) were the only group to conduct and report multiple observations using the same instrument over time.

In conclusion, 14 research papers that addressed the variables social support, substance use, and pregnancy or motherhood were reviewed. The studies were dominated by correlational, cross-sectional and cohort designs. While the sample sizes appeared to be adequate for the majority of the studies, the studies included primarily low-income groups of women and Black women. Chasnoff and colleagues (1990) and Vega and colleagues (1993) demonstrated that substance abuse is evenly distributed across socioeconomic and racial lines. The differences lie in the types of substances that are used in these groups and how well White and upper and middle class pregnant substance users seem protected from scrutiny. Even with the studies that focus on low-income and Black women, the picture is not complete. One time questionnaires fail to

provide a complete picture of the process of addiction and recovery in pregnant women and new mothers.

Although there are flaws in the design and measurement of the presented studies, there is some evidence that:

1. Partner support seems to be related to substance use and pregnancy outcomes for low-income, African American women (Stephens, 1985; Zuckerman, et al., 1989) and mother support seems related to substance use in White women (Norbeck & Anderson, 1989).

2. The quality of mothering in the home environment may be a stronger indicator of the neurodevelopmental performance of infants after the neonatal period than exposure to certain substance in the uterine environment(Black, et al., 1993; Sydso, 1992).

3. Depression is a covariant in pregnancy and substance use outcomes (Bresnahan, et al., 1992; Degen, et al., 1993; Hanna, et al., 1994; Sequin, et al., 1995; Smith, et al., 1992; Sydso, 1992; Zuckerman, et al., 1989).

4. Substance users care about their children (Dumas, 1992; Hanna, et al., 1994; Kearney, et al., 1992; Kearney, et al., 1994), but attitudes toward pregnancy may be associated with the amount of substance use (Hanna, et al., 1994).

Gaps in the Literature

Based on the review and critique of the relevant literature the following gaps are identified:

1. Longitudinal prospective descriptions of the health promoting and health damaging aspects of the social environment as it relates to pregnant women and new mothers who are in various phases of the addiction and recovery process are missing.

2. Social support instruments in studies investigating pregnant women and new mothers who use substances have only been used for reporting at

one point in time. Longitudinal or repeated measures of social support

has not been reported in the reviewed literature. Also, the interaction

among personal, social, and environmental factors over time is missing

for this population. It is possible that social support dynamics and the

social support networks change among pregnant women and new mothers who

are at different points in their substance use or recovery process.

Understanding these dynamics over time is important for providing

appropriate treatments and therapeutic interventions.

3. While partner support has been studied for this population, the

support from other network members has not been well addressed. It is

possible that when women are in recovery, they adjust their network

contacts to include individuals who are supportive of their sobriety,

possibly replacing addicted partners.

4. There have been no studies investigating the differential perception

of support by pregnant women and new mothers who have used substances.

For example, a woman may not view an intervention as supportive by her

family until years later. Was it support at the time it was given or was

it support at the time it was perceived as support by the woman even if

it was not perceived as support until years later? This element of time

is important in order to evaluate the success of treatment programs.

<center>Theoretical Framework</center>

Social support gained popularity in the 1980's and remains a

concept that has generated much research and debate in the scientific

literature. The social environment as it relates to substance abuse in

pregnant and postpartum women is of particular interest because of the

possible influence on the development of addictive behaviors and

recovery within a social environment context.

Social Support Theory

Historical Perspective

Mead (1934) was one of the earliest philosophers in social psychology to address the reciprocal nature of the individual as he related to society. He stated, "There is no living organism of any kind whose nature or constitution is such that it could exist or maintain itself in complete isolation from all other living organisms (p. 228)". He proposed that social relationships were a necessary and indispensable part of an individual's life. The "rational" individual defines himself in terms of societal expectations which involves taking the role of others, use of symbolism, and communication. The assumption of a reciprocal relationship provided the idea that the individual in some sense is able to determine and control his environment. His assumptions raise two questions. The first relates to how "irrational" individuals define themselves. The second relates to how the environment influences social relationships especially when considering chemically dependent individuals.

Mead's work was instrumental in the development of a theory that viewed human beings within a social context. By the early 1970's several authors were beginning to explore the concept of social support (Caplan, 1974; Cassell, 1976; Cobb, 1976).

In one of the earliest and most frequently cited works, Nuckolls and associates (1972) tapped into the concept while measuring "psychosocial assets". They studied 170 women who were 32 weeks pregnant to determine the relationships between psychosocial assets, social stresses and pregnancy outcomes. They found that high stress women with high psychosocial assets had only 1/3 the complication rate in pregnancy and delivery than high stress women with low psychosocial assets. This early work suggested that there was possibly some mechanism by which

social interaction and support mediated the stressful events in one's life to reduce morbidity.

From the evidence of multiple citations, Cassel (1976) and Cobb (1976) have been credited with the origination of the concept of "social support" as a variable in the study of illness and health. Cassel (1976) presented an epidemiological perspective in his views pertaining to the role that social environment played on host susceptibility and resistance to stress. He argued that protective factors (one of which was social support) buffered or cushioned the individual from the physiologic or psychologic consequences of exposure to stressor situations.

Cobb (1976) supported the concept of a person-environment fit where relevant needs were met. His paper is commonly cited for his attempt at a clear definition of social support, information leading the subject to believe that he is (a) cared for and loved, (b) esteemed and valued, and (c) that he belongs to a network of communication and mutual obligation. He viewed social support as a moderator of life stress.

It was also during the late 1960's and 1970's that theories about attachment (Bowlby, 1969) and parent infant bonding (Klaus, Kennell, Plumb, & Zuehlke, 1970; Klaus, Jerauld, Kreger, et al., 1972; Klaus & Kennell, 1970, 1976, & 1980) appeared in the literature. This spurred both scientific and public interest in the importance of the development of human relationships starting at birth, progressing through childhood, and continuing throughout the life span.

Social support provided a popular avenue for the investigation and explanation of the interactions of life stress, morbidity, and mortality that individuals experienced (Berkman & Syme, 1979; Lin, et al., 1979; Turner, 1981; Wilcox, 1981; Norbeck & Tilden, 1983). The findings from these investigations led many social support theorists to generally

conclude that support enhanced positive health outcomes either directly or through its buffering effect on the experience of stress.

Defining Social Support

Veiel & Baumann (1992) identified that the major problem in defining social support is that there are vague notions about what social support is, but the concept is usually defined by its elements, by what it does, who is affected by it, and what the personal factors are that affect perceptions of having "it" or not. Veiel and Baumann (1992) stated that a widely shared notion of what is meant by "social support" is necessary and should be more specific than the vague idea of positive influences of the social environment.

Definitions of social support have included the terms "feedback" (Caplan, 1974), "information" (Cobb, 1976), and "interpersonal transactions" (Kahn, 1979), yet social support may be more than these. Thoits (1992) referred to social support as a "perception" that assistance is or could be available from significant others. The terms used to define social support assume some type of communication via verbal and/or behavioral means.

Social Support As a Meta-Construct

Vaux, Riedel, and Stewart (1987) stated that social support may best be understood as a meta-construct referring to three subsidiary constructs including (a) network resources, (b) supportive behaviors, and (c) subjective appraisals. However, the instruments used to measure these constructs have inconsistencies with each other making it difficult to compare findings across studies.

Social Networks

Kahn (1979) defined social support as the "interpersonal transactions" that include one or more of the following key elements; affect, affirmation, and aid. These transactions occur within an

individual's "convoy" (Kahn and Antonucci, 1980) or the structure within which social support was given. This personal network consisted of family, friends, and others who provided supportive interpersonal transactions. In a convoy, individuals and their network rely on each other for support. This concept does not imply that mutuality or equality occurs within the supportive exchanges, but that there is a "goodness of fit" between the person and her/his social environment.

Kahn and Antonucci envisioned a convoy as three concentric circles surrounding a focal individual. The innermost concentric circle consisted of people who were the closest to the individual and perceived as the most important support givers (best friend or confidant). This circle was viewed as the most stable. The outermost circle represented members who were the least close sources of support and who were likely to be co-workers and neighbors where support was based upon role relations. This circle was viewed as the least stable. The second circle consisted of family and friends who exhibited more closeness than the outer circle and were less dependent upon role relations for membership into the convoy than members of the third circle. This convoy was visualized from a life-course perspective. It was deemed temporally based and dynamic with a changing structure based upon roles, patterns of stress and coping, and individual characteristics over time.

Hirsch (1981) proposed that networks reflected the nature and value of an individual's participation in the major sphere of life. These networks served as a personal community that embedded and supported critical social identities. An underlying assumption in his proposition was that individuals chose among feasible alternatives in the creating and maintaining of their personal communities.

Laireiter and Baumann (1992) summarized important concepts regarding networks in terms of structure, interactional features, and

functions. Structure was characterized by size, density, number of clusters, and centrality. Interactional features described the frequency of contact, multiplexity, reciprocity, emotional closeness, and kind of relationships. Functions referred to emotional closeness or social support factors. They discussed the importance of individuals being socially integrated or involved in social life in order to benefit from network features. Their summary provides the basis for network analysis by outlining the component parts. However, although the time element is implied, the importance of time and timing in significant relationships is not addressed.

Social Support Behaviors

The identification of support behaviors as the mechanism by which individuals received social support was first presented by Weiss (1974), Gottlieb (1978 & 1981), and Barrera, Sandler, and Ramsay (1981). This action oriented approach to understanding support is still evident in research today (Black, et al., 1993).

Weiss proposed that different types of relationships furnished different relational provisions. He postulated that all of these provisions could be required by individuals at least under some conditions. He identified these "provisions" as (a) attachment, (b) social integration, (c) opportunity for nurturance, (d) reassurance of worth, (e) a sense of reliable alliance, and (f) the obtaining of guidance. He conjectured that "an adequate life organization" is one that makes available relationships that together can furnish all relational provisions. Weiss provided the groundwork for considering whether or not different types of support were of varying use or benefit with specific types of human conditions and transitions.

Gottlieb explored naturally occurring support systems and used content analysis of interview data to develop a classification scheme

consisting of four classes of behaviors deemed important in the conveyance of support. These included (a) emotionally sustaining behaviors, (b) problem solving behaviors, (c) indirect personal influence, and (d) environmental action (or social advocacy). He proposed that once these behaviors were better understood in the natural systems (or the networks as identified by targeted individuals), applications for the provision of support could be incorporated into the professional arenas. This could occur either by fostering healthy interactions within the natural systems or by developing mutual aid and professional services that could fill the gaps in the natural systems.

Barrera and associates (1981) developed an action oriented view of support and attempted to identify the behaviors and interchanges that occur in supportive interactions. They developed the Inventory of Socially Supportive Behaviors (ISSB) in order to assess what individuals do when providing support during natural helping processes, and assumed that supportive or helping actions themselves were social support.

One problem with the behavioral approach is that it does not take into account the individual's perception of giving or receiving support. And it is this perception of support that may have the most powerful influence on individuals, whether or not any overt behavioral action is displayed objectively. Another problem with the behavioral approach is that altered consciousness through the use of drugs may influence perceptions of support and is not addressed in the model.

Social Support Appraisal

A key factor in whether or not support is viewed as support by the recipient is in the perception itself. A helpful act that a support person deems helpful may actually not be viewed as supportive by the recipient. Conversely, even without a supportive act by someone viewed as a support person, the receiver may perceive that support is being

received. One conclusion is that if support is not perceived as support, it is not support.

Vaux (1988) discussed this issue and stated that much of the time perception and actuality corresponded, however there were times when perception and act diverged. He attributed this to supportive acts being unrecognized, affection taken for granted, and that the constitution of support may be embedded in the "private language" that characterizes communication in close relationships.

Support appraisal is a key concept for understanding an individual's perception of support. Many of the instruments used to determine amount, type, and quality of support are built on self-report by the respondents. Therefore, instrumentation, itself, is geared toward the perception component and the underlying assumption about support is that if it is not perceived, it is not there. There is a problem with the underlying assumption that support must be perceived at the same time it is given. There may be instances where a supportive action by an individual was not perceived as beneficial at the time it was provided. This support may not be appreciated or perceived as support until much later. For example, women addicts may not perceive a family intervention done to them as supportive until years later after they have been in recovery and are leading clean and sober lives. So the question is whether or not the support was support when it was given or when it was perceived as support.

The Physical Environment As an Indicator of Social Support

Gottlieb (1983) identified an interest by psychologists in the qualities of social environments that help people to develop resources and to cope effectively. These social environments included communities or settings where interactions between caring groups could contribute to

"primary prevention" or health. The importance of the physical environment is implied.

Fleming, Baum, and Singer (1985) discussed the effects of the physical environment on mood and behavior that in turn may affect access, use, and perception of support. They posited that "the environment exerted powerful influences over social behavior, emotion, and motivation" (p. 327) and that "features of the environment can affect social support" (p. 328). Fleming and colleagues asserted that groups were basic to social support and that group formation was enhanced by passive social contact, proximity, and appropriate space. When viewing this concept in terms of areas where drug sales occur openly in neighborhoods, it makes sense that the support network may include drug dealers, or alternatively, that the physical surroundings may support a drug using lifestyle or may induce isolation.

Other macro-environmental factors may be important to determine how some support works and under what conditions. Some of these factors include the racial-cultural environment, the economic environment, and the political environment. Women's sense of who they are occurs within the context of racism, culture, socioeconomic status, and the political power structure and laws that rule their lives.

Addressing Negative Aspects of Social Interaction

The social support literature has consistently addressed its positive and health promoting dimensions. However, in later discussions about social support, the idea of negative aspects of social interactions emerged. Tilden & Gaylen (1987) proposed that social interactions were neither free nor always benevolent and that not all ties were necessarily supportive. Individuals identified as providers of support could also be considered a source of conflict and stress. There were costs as well as benefits. When the social exchanges were out of

balance, the possibility of subsequent stress, anger, guilt, worry were increased.

Coyne, Wortman, & Lehman (1988) quoted Yeats, "Too long a sacrifice - Can make a stone of the heart" to address the issue of miscarried helping and the negative impact on health. They described miscarried help in terms of the initial situation construction, costs of care giving, costs of receiving care, redefinition of the problem, reconstruction, over-involvement, and stalemate, as cyclical components of the interaction based in historical experiences between the individuals.

The costs of providing support to addicted individuals can be many. Family violence, diminished economic resources as a result of substance abuse, joblessness, poverty, homelessness, involvement in the criminal justice system, and relapsing into addiction are just of few of the problems that create stress for support providers (Hawkins, et al., 1992). Burton (1992) used qualitative methods to assess the consequences of parental drug addiction on the grandparents and great-grandparents who were raising the addicted parent's children. She found that only three percent of the respondents received consistent, reliable familial support in their role as surrogate parents. Grandparents also reported experiencing psychological, physical, and economic costs in performing their roles. Betrayal of trust and past failures with recovery may encourage over-involvement behaviors by support providers to individuals in recovery as a self-protection mechanism. Low self-esteem, guilt, depression and shame may influence the addicted individual in attempts to utilize support networks.

Harris (1992) discussed how divided loyalties, critical and hard-hearted support figures, self-protection of support figure, subject protection of self and support figure, unavailability of support figure,

well-intentioned and inappropriate support behaviors, and definition of the situation could be key factors in whether support had positive or negative health outcomes. An interesting question emerges, however. If an individual perceives the actions to be non-supportive at the time of reception, but years later perceives the actions as supportive, then was it social support at the time of action or at the time of delayed perception? This seems an important question when considering that measuring benefits of support may require a delayed assessment. An example is the case of a substance user who does not view actions and advice from family and friends as supportive while addicted, but later in recovery reflects upon these actions as having been supportive and instrumental in initiating and maintaining the recovery process. This concept of delayed view of benefit might also have implications in a managed care environment where immediate cost savings are expected and the long term outlook seems not to be a priority.

From a clinical perspective, individuals who are chemically dependent can place great strains on family and friend support networks. While there are studies that investigate social support and addiction from the perspective of pregnant women and new mothers who use substances as described in the literature review, there are few studies that address social support from the givers' perspective. The women who successfully complete treatment programs, may need the support of the family once they return to the community. These family support givers may have lingering issues with the recovering woman which may indicate the need for services for the total family.

Clinically, there may be a long history of substance abuse by the addicted individual and also by significant people in the family and friend network. Some researchers have attempted to look at the influence of substance abuse on the lives of family members. Fawzy and colleagues

(1983) used ethnographic methods to report an intergenerational link between parental substance use and use by their adolescent children. Hawkins and associates (1992) identified and analyzed several studies in their landmark review that confirmed the intergenerational substance abuse link between youths and their families.

A final consideration in the evaluation of "negative" factors in social interaction lies in relationships that positively influence poor health behaviors and outcomes. An example of this in a substance using population would be the encouragement by a family member or friend to "score some drugs" in order to "party" together. A social support score might very well demonstrate highly positive perceived support, yet this type of support may not be conducive to good health outcomes. Norbeck & Anderson (1989) may have identified this phenomenon when they reported that high social support was related to substance abuse among low-income White pregnant women (p=.03). Some examples of social support that demonstrate negative social and health consequences include gang membership, the Nazi movement, and the KKK.

Using Kahn's "goodness of fit" concept, convoys of substance users may be inclusive of significant relationships with other influential substance users. This "goodness of fit" may also apply to the environment where drugs are readily available, easily accessible, and provided by individuals who also participate in the social support network of an individual.

In summary, social support and addiction has been studied and social support and motherhood has been studied, but social support in pregnant women and new mothers who use substances has not been well addressed. The social environment and the health and personal resources and demands of childbearing women who have used crack cocaine needs

further investigation in order to develop appropriate therapeutic

approaches for this population.

CHAPTER III: METHODOLOGY

Research Questions

Four research questions guided this prospective, longitudinal, descriptive study that explored the social environment of pregnant women and new mothers who used crack cocaine. The social environment was explored within the context of selected personal resources, demands, and health status and drug use and abstinence. The following research questions were addressed in this study:

1. What were the personal resources and demands (self-esteem, depression and well-being, and health) during pregnancy and at three to five months postpartum among women who used crack cocaine?

2. What was the social environment of pregnant women who used crack cocaine using the dimensions of social network and social support (NSSQ), the perceptions about social support and the social network (interviews) and physical environment (interviews) both before and after the births of their babies?

3. Did depression, self-esteem, and social support change from pregnancy to postpartum for women who used crack cocaine?

4. What is the utility of a multi-method approach in answering questions related to the social environment of pregnant women and new mothers?

Design

A longitudinal, mixed method, prospective, descriptive study of pregnant women who used crack cocaine was conducted over a four year period extending from January, 1994 through December, 1997. This method was chosen in order to broaden the understanding of the social environment of pregnant women substance users within the context of their personal demands and resources over time (see Tables 1 and 2). Data collection included structured pencil and paper questionnaires and

open-ended interviews. This multi-method approach was used to broaden

techniques by which to evaluate the social environment of addicted

pregnant women (see Appendices A to E).

Multiple methods, when used in one study of the same object or

event, can depict a phenomenon with more variation and depth than a

single method alone. The purpose of multiple methods is to overcome

deficiencies and biases that stem from any single method (Mitchell,

1986). Using a mixed method approach has become a device used to grasp

the richness of the complexities of human phenomena. This method is an

attempt to improve validity by combining various techniques in one study

and improve completeness, even when findings do not agree (Denzin,

1989). The combination of methods can provide unique information,

improve measurement strategies for future research, and validate

findings from different sources specific to the person and environmental

demands and resources of chemically dependent pregnant women and

mothers.

Research Setting

The study was conducted in San Francisco with an estimated

population of 739,000. During the time of the study, there were four

main residential treatment programs for pregnant women and mothers with

children. Each program housed from 6 to 20 women with or without their

children for a maximum of 18 months. Programs accepted women with any

type of substance dependency with the primary substance usually being

cocaine or methamphetamine dependence. Pregnant women could participate

in two other residential programs but there were no facilities for

babies or children at these sites and they would either leave or

transfer to another program to complete their recovery treatment.

Outpatient treatment services were also available through a variety of

programs in the city. These programs were of a more transient nature and

offered a varied intensity of services ranging from drop-in counseling to full day programming that included parenting classes, supportive counseling, job training, and assistance with housing. Finally, there were many 12 step programs available in the community.

Not all pregnant women who used substances were engaged in recovery programs. Pregnant women not in recovery could have entered private care at private offices in the community, an HMO clinic/hospital, or four clinic sites. These four clinic sites used a university based teaching hospital, a public teaching hospital, and two community hospitals. The majority of women at the first two clinical sites and one of the community sites were covered by the Medicaid program. The other community hospital accepted Medical, but was geared toward HMO plans. Finally, a community research center was conducting investigations about violence in pregnant and postpartum women who had used substances. These women may or may not have been receiving prenatal care.

Six sites were selected for this study for recruitment purposes including university clinic, the four community-based residential treatment programs (RTP) specifically for the care and recovery of addicted pregnant and mothering women and their children under the age of four, and the community research center. Each of these sites used one of five urban hospital settings for their births including a county hospital, three community hospitals and the university based hospital previously described.

The sites were chosen based on accessibility and the possibility for retention of participants longitudinally. Access was denied to the public hospital clinic with the stated reason that the women were already being heavily studied and research overload was a consideration. The community hospital that cared for a largely Medicaid population was

approached via a physician colleague. After submitting the proposal and flyers and having several discussions on the phone, there was a verbal agreement that they would refer women to the study who met the criteria. No women were ever sent from the clinic. However, women in the RTPs delivered at this site, so in essence, there was some representation from this clinic.

Queries were also made at the remaining community hospital and HMO through colleague contacts. The response at these sites indicated that they didn't feel they had a crack problem so access was denied. Two women from the RTPs delivered at this community hospital, but no women were recruited from the HMO clinic and hospital, thus sampling favored poor women. Outpatient and 12-step sites were not approached because of the transient nature of the population and the difficulty that other investigators had reported with retention for longitudinal studies.

<center>Sample</center>

Estimates using (a) Substance Abuse and Mental Health Services Administration (SAMHSA) National Household Surveys on Drug Abuse (1994 and 1995) and (b) substance abuse indicator data from the Department of Public Health Community Substance Abuse Services (CSAS) for San Francisco were calculated to determine the number of possible adult, childbearing aged women who were pregnant or with children and in residential treatment for White, Black and Latina women. It was estimated that there were 95 White women per year, 70 Black women per year, and 118 Latina women per year who were possible crack users and in their adult, childbearing years in San Francisco. Of these women, it was estimated that four Latina, eight Black and six White women entered residential treatment for crack cocaine as their primary addicting substance. This small number reflects the amount of allocated spaces in residential treatment for women with their children who are addicted to

any substance. Therefore, women who were addicted to heroin or alcohol as their primary substance were also residing in these programs as were non-pregnant women with their young children. It is assumed that women who were not in residential treatment were either not in treatment or in some type of outpatient program.

During the four years that data were collected, this represented an adult, childbearing population estimated at a total of 380 White women with 24 in residential treatment, 280 Black women with 32 in residential treatment and 472 Latina women with 16 in residential treatment. Estimates projected that there were a total of 1132 adult women in their childbearing years who used crack cocaine during the four year study and a total of 72 women in residential treatment for their problem. Asian women were not included in national data about crack use because only 3% of the total male and female population of any age group sought treatment for any addiction problem in San Francisco during this time.

A convenience sample was targeted from this estimated population. Adult, English-speaking, pregnant women who were self-admitted crack users and had entered prenatal care were targeted at the onset of the study. An outpatient prenatal care clinic and residential treatment programs were used to obtain the pool of potential participants. Women who were in residential treatment were also in prenatal care as a condition of the treatment program. Using an outpatient clinic offered the possibility of obtaining women who were receiving prenatal care, but not in treatment.

Any woman who admitted to crack use in her pregnancy was considered for the study. There was the possibility that women would be recruited who did not technically have an addiction diagnosis based on specific criteria, e.g. DSM-IV. However, the rationale for recruiting

any woman who had admitted crack use during her pregnancy was that crack is an addictive drug and women may under report use (Jacobson, Jacobson, Sokol, et al., 1991). Women who were in residential treatment were self-admitted problem users. Also if a woman identified herself as a crack user even once during pregnancy, it was assumed that she would have some knowledge about the topic that would be useful in an exploratory investigation.

A convenience sample was chosen because it allowed the recruitment of the accessible, available women. As stated earlier, this population has often been difficult to recruit and poses greater difficulty with long-term retention. The rationale for choosing residential treatment sites for recruitment was the improved prospect of keeping women in the study and being able to track them more easily for the second interview. Women who actively use substances have been reported to avoid the health care system for a variety of reasons. Polland, et al. (1993) identified this "flight from care" as "going underground" in order to self protect against legal incrimination, stigmatization, and removal of their children by Child Protective Services (CPS).

The obvious advantages for using a convenience sample include logistics and less financial cost. One disadvantage is that volunteers may not adequately represent the population being targeted. The sample population may not be representative of all crack users in prenatal care. For example, there may be a lack of racial and/or socioeconomic diversity. Findings may not represent the experiences of crack using women who have not had prenatal care during their pregnancies.

Women who received prenatal care would ideally have received vitamin supplements and nutrition counseling. They would be evaluated and treated for infections and other risk factors that could affect neonatal outcomes. Social factors, for example domestic violence and

poverty, could be addressed during prenatal visits and appropriate referrals given. Eliminating at least some of the potentially harmful confounding risk factors may provide some protection from substance exposure to women and their infants (Chasnoff, 1988). Women who do not receive prenatal care lose an opportunity to interact with health care providers and optimize their health outcomes. Therefore, it was assumed that the data would reflect the better health status for these women and their infants than crack exposed women who did not receive prenatal care.

This was an exploratory study, so description and not hypothesis testing was the purpose of this study. While sample size estimation was not reported for this level of analysis, these 30 women represented approximately 40% of the pregnant women in residential treatment and prenatal care at mostly public facilities during the four years of the study.

Human Subjects Assurance

The possibility of loss of privacy and confidentiality was of special concern for the participants because of the potential for adverse consequences should disclosure to outside agencies occur. The amount of disclosure provided by the women to the investigator may have, in part, been influenced by concern for how the information would be used. Altered disclosure would influence the conclusion validity and internal validity of the study. Women were fully informed verbally and in writing of how their privacy would be protected as disclosed in the informed consent that they signed.

Participants were advised of the possibility of reporting suspected child abuse and what would possibly occur should a report be made. By law, suspected child abuse was reportable to Child Protective Services (CPS). The protection of the child was mandatory. Equally

important was the provision of help for the parents. Persons legally required to report, safeguards for mandated reporters, and the process for reporting were addressed in CPS guidelines.

Reporting suspected abuse initiates a CPS investigation by a case manager which usually means a home visit evaluation. Many mechanisms are in place to facilitate keeping families together before there is any threat of placement into foster care. The majority of women in the San Francisco Bay Area who use substances while pregnant, even with documented positive urine drug screens in their newborns, are discharged with their babies. During the time of this study, according to California Senate Bill No. 2669, reports of substance abuse alone, with or without positive urine toxicology screens for mothers and/or babies were not sufficient for mandated reporting to Child Protective Services. Coexisting abuse or neglect must also have occurred.

Women who were being recruited for the study had already openly admitted their crack use during their pregnancies. Women who were discovered incidentally, e. g. through urine toxicology screening, were not approached because (a) there was an ethical concern regarding invasion of privacy and boundary cross-over in the nurse clinician/researcher and client relationship and (b) women who were attempting to hide substance use from their clinicians or in denial, were unlikely to disclose information about their substance use to a researcher associated with their prenatal clinic.

Many of the women in the proposed sites who used substances during their pregnancies were already involved with public health and child protective services and had case workers. A Federal Confidentiality Certificate acquired from the National Institute for Drug Abuse was obtained which stated that the courts could not subpoena the records and force the investigator to reveal information about participants in the

study. It was extremely unlikely that these documents would be useful in a court of law. In fact, the medical records at the medical clinic already documented most of the sensitive information being elicited from subjects. The medical records were more likely targets for investigation than coded data sheets.

After consultation with a university medical center attorney regarding the issue of breach of confidentiality, particularly with regard to questions of illegal drug use and illegal behavior the advise was only to inform the women that all information would be kept in confidence to the full extent of California and federal law. Possible consequences of breach of confidentiality issues were also discussed with two perinatologists; an attorney for National Health Care Reform specific to chemically dependent women; and two nationally recognized nurse experts who have worked in the field of perinatal substance abuse. All of these experts in their fields agreed to the following: (a) all participants should be advised that any suspicion of child abuse was reportable and an explanation of state Senate Bill No. 2669 given, (b) while there was a very small chance that records would be subpoenaed, the information could not be used if data were coded and no identifiable information were incorporated into the documents and (c) women were free not to answer any questions that were asked of them and that this was clearly stated in the verbal and written consent.

The women were informed that they could become upset by the questions being asked during the interview process. They were also advised of their right to decline participation at any time during the investigation.

Data Collection Methods

Each site was given information about the study and the selection criteria. Health care providers, administrative assistants, social

workers, and other study participants at each site referred potential

participants to the private voice mail phone number of the investigator.

Prospective participants could leave a private message and phone number

if they were interested in participating in the study.

Operational Definitions

The translation of concepts into researchable phenomena involves

the clarification and definition of terms so they are potentially

observable or amenable to measurement (Polit & Hungler, 1978). The

following operational definitions were used for this study.

1. Depression and well-being: Depression was defined as a constellation

of non-psychotic symptomology that included depressed mood, loss of

interest or pleasure, significant weight loss, insomnia or hypersomnia,

psychomotor agitation or retardation, fatigue, feelings of

worthlessness, diminished ability to think or concentrate, and recurrent

thoughts of death or suicidal ideation. As discussed earlier, depression

may covary both with pregnancy and postpartum and with substance use.

Depressive symptoms have been associated with distress or impairment in

functioning and were likely to directly or indirectly affect recovery.

Well-being was defined as the absence of these symptoms and the sense of

feeling good about life. Depression and well-being were assessed using a

bipolar scale, the Generalized Contentment Scale (GCS), in the Clinical

Measurement Package (Hudson, 1982).

2. Mother figure: The mother figure was an older female role model and

care provider who the woman identified as being most responsible for

providing her with mothering when she was a minor (less than 18 years

old). The mother figure could actually be the biological mother, but

could also include mother substitutes such as grandmothers, aunts, older

sisters, foster mothers, or godmothers.

3. Personal resources and demands: Personal resources and demands were constellations of attributes of the women which contributed to how they viewed or utilized their support networks. Two attributes identified at the onset of the study included the bipolar concepts of (a) depression and well-being and (b) high and low self-esteem.

4. Postpartum: The postpartum period was defined as three to five months after the delivery of a living or stillborn child. This time frame was chosen for the practical reasons of keeping the participants in a longitudinal study. Also, three to five months was a time frame used in the transition to parenthood literature.

5. Pregnant crack cocaine user: Any pregnant English speaking adult woman at any gestation in her pregnancy who entered prenatal care and described any crack use during her pregnancy. Crack use did not necessarily indicate addiction although there were women in the study who were addicted.

6. Self-esteem: Self-esteem was the evaluative component of self concept and was assessed by the Index of Self-Esteem (ISE) in the Clinical Measurement Package (Hudson, 1982).

7. Social environment: The social environment was defined as the total social elements in the social network, social support, and external environmental factors such as physical living areas (home or neighborhood), socioeconomic conditions, and the interactions that occurred between some or all of them. The social environment included all of the social worlds within which the women interacted, e.g. home, work, school, neighborhood, church, etc. Social environmental factors were elicited from both the NSSQ and the interviews.

8. Social network: Social network was defined as the structure of members within a social group with whom the individual interacted as described by Kahn and Antonucci (1980). The Norbeck Social Support

Questionnaire (NSSQ) (1981 & 1983) and data from the interviews was used to determine membership in the social network.

9. Social support: Social support was defined in terms of the appraisal of social support as perceived by the pregnant and mothering women who participated in the study. This was also be assessed by the NSSQ (1981 & 1983) and interview data.

10. Substance use: Substance use was defined as any admitted use of crack cocaine with or without use of other substances. Crack was chosen because of (a) the availability of potential research participants in the clinical sites, (b) the past high media publicity about crack use in pregnancy, crack babies, and the social stigma attached to use of this particular drug, (c) the association of crack with high risk sexual behaviors that increase the risk for HIV infection, (d) the stimulant effect that may alter perceptions differently than other substances e.g. opiates, although it was recognized that polysubstance use was a likely possibility. Women who admitted any use during pregnancy were chosen because of the likelihood that exposure occurred more than once during pregnancy. Jacobson and associates (1991) reported that women under-reported their substance use while pregnant to minimize adverse consequences. Clinical experience has demonstrated several episodes of denied use, yet positive urine toxicology screens.

<div align="center">Instruments (Pencil and Paper Questionnaires)</div>

Personal Resources and Demands

Personal resources and demands included the bipolar variables of (a) depression and well-being and (b) high and low self-esteem. These variables were measured using scales from the Clinical Measurement Package (Hudson, 1982).

Depression. Depression has been identified as an important variable in studies involving substance abuse, pregnancy, and postpartum

as described previously in the review of the literature. However, unlike the transition to motherhood studies of the 70's and 80's, longitudinal studies investigating depression in women substance users during pregnancy and again in their early motherhood experience have been non-existent.

Depression and well-being were measured during pregnancy and postpartum using the General Contentment Scale (GCS) (see Appendix A) (Hudson, 1982). The GCS is one of eight questionnaires in a Clinical Measurement Package. It is a 25 item bipolar five point rating scale designed to distinguish the degree of well-being and absence of depression (1 = "rarely or none" to 5 = "most or all of the time"). The total possible score is 100 with low scores (< 30) representing low depression and high well-being; and high scores (> 30) representing high depression and low well-being, with 30 being the cut-off point differentiating well-being from depression.

For this study, scores for depression and well-being were divided into seven categories and then further collapsed into three categories. The seven categories were assigned levels of depression and well-being ranging from "Extremely low depression/Extremely high well-being" (scores = 0-5) to "Extremely high depression/"Extremely low well-being" (scores = 66-100). The Clinical Measurement Package states that individuals who score above 70 have suicide risk, and that suicidal ideation is often found among clients whose scores exceed 50.

The final recategorization of GCS scores resulted in three categories of depression and well-being. These were "Low depression/High well-being" (scores = 0-25), "Average well-being" (scores = 26-35), and "High depression/Low well-bing" (scores > 35).

Taylor (1998) used both seven and three category differentiations in her analysis of perimenstrual symptoms in women with and without

treatment. These same categories were used in this study to differentiate between non-depressed and severely depressed women along a gradation. "Average well-being" was determined by using a five point range above and below 30 which Hudson defined as the standard error of measurement.

Reliability estimates have demonstrated that the GCS has a high degree of internal consistency reliability (alpha = .89-.96) (Hudson, 1982). Criterion based validity of the GCS was also demonstrated and based upon comparisons with other measures of depression including the Beck Depression Inventory, SCL-90, and Zung Depression Scale.

The value of this instrument is in its bipolar measure of depression and well-being. The instrument is also short in length, easy to understand, has a high/low cutoff, and is highly correlated with other reliable depression measures as stated earlier. This instrument has also been used to evaluate changes in depression after clinical therapy in large samples of women (n = 2140) (Hudson, 1982; Taylor, 1998).

Self-esteem. Self-esteem has also been identified as an important variable for women who have had a history of substance abuse. Self-esteem was measured by the Index of Self-Esteem (ISE), also one of eight questionnaires in The Clinical Measurement Package (see Appendix B) (Hudson, 1982). The ISE was developed for clinical populations to assess therapeutic changes in self-esteem over time. Hudson distinguished between self-concept and self-esteem and defines self-esteem as the evaluative component of self-concept. Low self-esteem scores on the ISE have been significantly correlated with symptoms of depression and anxiety. Hudson recommended that individuals who demonstrated very low self-esteem scores should be evaluated for depression.

The scale consists of 25 items measuring self-esteem on a 5-point scale. The maximum score possible is 100 with scores < 30 representing high self-esteem and scores > 30 representing low self esteem. For this study, scores for self-esteem were also divided into seven categories and then further collapsed into three categories as previously done by Taylor (1998). The seven categories were assigned levels of self-esteem ranging from "Extremely low self-esteem" (scores = 66-100) to "Extremely high self-esteem" (scores = 0-5). The final subdivision of ISE scores resulted in three categories of self-esteem. These were "Low self-esteem" (scores > 35), "Average self-esteem" (scores = 26-35), and "High self-esteem" (scores > 35). The ISE has demonstrated a high internal consistency reliability (alpha = .91-.95) in large samples of women (n = 1745).

Social Environment

The woman's social network and quality of support has been identified as important social environment variables in pregnancy and new motherhood (Shereshefsky & Yarrow, 1973; Grossman, et al., 1980; Mercer, 1986) and in substance use or non-use (Gordan & Zrull, 1991; Johnson & Herringer, 1992; Zapka, et al., 1993) and when pregnancy, motherhood, and substance use are considered together (Norbeck & Anderson, 1989; Degen, et al., 1993).

Networks and social support were measured using the Norbeck Social Support Questionnaire (NSSQ) (see Appendix C). The NSSQ was originally designed to measure multiple dimensions of social support based on Kahn's (1979) conceptual definitions. The individual's convoy was described by Kahn and Antonucci (1980) as "the set of persons of whom he or she relies for support and those who rely on him or her for support (p. 269)".

The NSSQ instrument has three main variables: total functional support, total network, and total loss. Two subscales for emotional support and aid were proposed to measure two of the components of supportive transactions. Scores reflected the respondents' perceived quality of these interactions between themselves and other listed network members. Emotional support was purported to describe the affective and affirming nature of these interactions. Aid was described as tangible support that was given or received in terms of material goods or assistance (Norbeck and Anderson, 1989). These subscales were proposed as two components of supportive transactions and defined as functional support.

Functional support can be calculated as either average functional support or total functional support. The average functional support is a mean score that places functional support on the original scale of 0 to 24. The total functional support score is dependent on the number of individuals in the network and values can vary greatly. For example, it is more likely that individuals listing only two network members have a lower total functional support score than women who report twenty. Each type of scoring reflects a different component of functional support. The average functional support score allows for mean comparisons between network members within the context of the scale. The total functional support considers the volume of support that is derived from each network category. When only one member in the category is listed, as with mother or father, the average functional support will be the same as the total functional support. When more than one member is listed, as with multiple sisters or brothers, the total functional support score will be higher than the average functional support score. This can be helpful in determining whether or not it is the average amount of

support or the total amount of support that affects variables such as depression or self-esteem.

The participant created a list of each significant person in her life, using a first and last initial and a description of her relationship to the respondent. These network members were then each rated on the support variables using a 5 point Likert scale on six questions. Four questions assessed affective aspects of support including: (a) being liked or loved, (b) being respected or admired, (c) being able to confide, and (d) having actions and thoughts supported. Two questions addressed the tangible aid aspects of support including: (a) borrowing money or getting a ride and (b) getting help when confined to bed. Scores ranged from 0-4 with 0 = "No support"; 1 = "A little bit"; 2 = "Moderate amount"; 3 = "Quite a bit"; 4 = "A great deal". Total scores for each network member represented the total amount of functional support perceived from the network member (range = 0-24). Each participant could list a maximum of 35 network members on their network list. A score of 0-24 was given to each network member.

Test-retest reliability estimates for the subscales and variables range from .85 to .97. Internal consistency reliability estimates were high for each of the functional and network properties (alpha = .88 or higher). Moderate levels of concurrent validity for affective support have been demonstrated with two other instruments, (a) the Cohen & Lazaraus Social Support Questionnaire (range: .44-.56) (Norbeck, Lindsey, & Carrieri, 1981) and (b) the Brandt & Weinert Personal Resource Questionnaire (range: .35-.41). The stability of the instrument over time was high for the short term (one week test-retest correlations ranged from .85-.92), but only moderate for the long term (seven month test-retest correlations ranged from .58-.78) (Norbeck, Lindsey, & Carrieri, 1983). The level of functional support did not change over

time, but the instrument was sensitive to changes that occurred in the network structure (Norbeck, Lindsey, & Carrieri, 1981; Norbeck, Lindsey, & Carrieri, 1983).

For the purposes of this study, three modifications were made and included the following:

1. The NSSQ "family" category was expanded into discreet categories of family members including mother, father, sister, brother, daughter, son, aunt, grandmother, and other family. These categories could later be collapsed back into the family category. Two categories were added for mothers-in-law and fathers-in-law. This was done in order to obtain data about specific family members and the amount and type of support they provided.

2. Modifications were made so that network members could be tracked by their appearance and disappearance at Time 1 and Time 2. Network members were assigned a specific slot at Time 1. If the initials did not reappear at Time 2, they were marked as missing data. If new members appeared at Time 2, they were assigned a new slot and had missing values for Time 1.

3. The final modification allowed participants to identify which members of their network were also substance users. The identification of these members occurred only after the completion of data gathering at the second interview so as not to alter the reliability and validity of the instrument. Respondents were shown the network list for Time 1 and Time 2 at the same time and asked to make a mark by the initials of all network members who had ever had a problem with drugs or alcohol.

Health Factors

Health factors for both mothers and their infants can affect substance use or non-use, depression, self-esteem, and social environment factors (Reed, 1987; Chasnoff, 1988; Finklestein, 1993). The

medical record, when available, an exit interview data sheet, and the reports by the women at their second interviews were used to assess maternal-infant health outcomes e.g. amount, duration, and frequency of drug use by verbal report and urine toxicology results, gestation at the time of delivery, birth weight, mode of delivery, complications for mother and/or infant, and contraceptive choice. Other personal dimensions relevant to this study included demographic factors (age, education, income).

Instruments (Interviews)

Data were also collected at Time 1 and Time 2 using a semi-structured interview guide (see Appendices D and E). Interviews were important because they provided the women an opportunity to share their experiences in their own words and not be forced to choose from fixed responses. These data illuminated some of the discrepancies noted in past studies about the relationship between social support and substance use in pregnant women (Norbeck & Anderson, 1989; Degen, et al., 1993).

The interviews were guided by what was known and not known about the nature of the social environment in substance using populations. Interview questions were originally derived from the reviewed literature. A clinical nurse specialist, a licensed clinical social worker, a doctoral student in psychology and three expert faculty in the area of addiction in women reviewed the questions and provided input. Finally, pilot testing with two pregnant women and two new mothers who used crack was conducted to determine the approximate length of the interview and understandability of the questions.

Throughout the course of the study, quarterly meetings were held with colleagues for a review of coded data, question modification and analysis. An example of a modification was the inclusion of questioning about spirituality after the first six women who were interviewed

mentioned this concept. The investigator's analysis was periodically reviewed to determine if any major biases or omissions noted. Sandelowski (1993) stated, that good qualitative data reduction captures the essence of a phenomenon and that validation of the data by other scholars can help ensure the researcher's interpretations of the data. While rigor is important, she warns that these techniques, if carried too far, may undermine the trustworthiness of a project. Each reviewer comes to the table with their own set of biases, experiences, knowledge, and agendas. "Reality is assumed to be multiple and constructed rather than singular and tangible" (p.3).

The semi-structured interview included questions about the family of origin, current relationships, substance abuse histories, criminality, physical environment, interactions in therapeutic settings (e. g. clinics, hospitals, and recovery programs), pregnancy and motherhood, stresses, daily routines, and motivators and deterrents for using and not using substances. The interviews took approximately one to two hours to complete. Time 2 questions also queried about the birth experience, early mothering experiences, and current life situation since the Time 1 interview.

Reflections About the Investigator As a Qualitative Instrument

When an investigator is an instrument of qualitative research, it is important to identify those factors that influence the conception of the questions and the data gathering and analysis. Personal, educational, geographical and career influences have been instrumental in the creation of these conceptualizations. Qualitative analysis involves an interactive process between the researcher, the data, and personal experiences (Schatzman & Strauss, 1973).

I am a native San Franciscan, a White woman, and a child of the 60's who was raised in a Catholic family. I was exposed to the summer of

love and the open invitation to young people to experiment with substances. Although I did not personally become involved in the illicit substances scene, many of my peers and some family members engaged in this activity. I was, however, introduced to alcohol early in my life as part of family gatherings and was allowed to have my first glass of wine at the age of 10. I saw this as an initiation and acceptance into adulthood by my family. The only two times I experienced hang-overs from drinking were during family gatherings. The first time was at the age of 15 with my family, the second, at the age of 17 with a boyfriend's family. My past and current drinking amounts to a few drinks per year, usually at social gatherings with friends.

Thankfully, two things occurred when I tried a cigarette in college. First, I became sick and vomited. Second, I was enrolled in an anatomy class. The day after my first cigarette, my anatomy lab partner and I cracked open the cadaveric chest of a smoker. His lungs were riddled with large hard tar rocks from his cigarette use. Thus I was discouraged from a nicotine habit.

I began my ethnographic career at the age of seven when I first became aware of inconsistent messages that I received from adult family and friends when they drank. Behaviors changed. People were not the same when influenced by substances. Some people became happier and silly, others, abusive and mean. Over the years, I observed discrepancies in behaviors and had many early experiences that offered an insider's perspective into the dynamics of substance abuse. As a teenager and in high school, I was observing people using drugs in the schools and at the free concerts in Golden Gate Park in San Francisco. I observed their behavior after drug use and the reactions of older adults to the open use of drugs and the associated free sexual expressions of the youth.

My nursing career began in a county hospital. My experiences included caring for women who used substances in pregnancy and who were having babies while incarcerated. I also learned how to help babies withdraw from their intrauterine substance exposure.

Many of the women were poor and came from different racial backgrounds. I was concerned that my White background would interfere with the quality of care I wished to provide. I was also beginning to ponder racism in America. So I asked the women what they needed and I attended seminars in "Cultural Sensitivity Training". I found that all of my clients wanted to be treated with dignity, respect, and compassion regardless of race, class, or life situation.

My clinical experiences have shaped my thinking about substance abuse among pregnant women and new mothers. I have some preconceived notions, for example, (a) crack cocaine is a destructive force against the integrity of families, (b) poor African American women who use crack cocaine are stigmatized, and (c) women who use crack cocaine can successfully recover, but it will not usually happen overnight. The recovery process may take time and more than one entry into a treatment program before there is change.

I am currently providing care for a population of low-income, pregnant, racially and culturally diverse women. I specialize in the care of women who use substances during pregnancy and have become a resource person for students, residents, and other staff. I view myself as a feminist and an advocate for these women and their families and a partner in their care. I believe that women are generally undervalued in society and that women of color experience this condition more severely than White women. I have strong negative reactions to labeling and stigmatizing women, whether it is a public media report about "crack

babies" or the judicial system supporting criminal charges for women who administer drugs through the womb.

I have learned the 12 steps of recovery and attempt to practice them in my own life. I feel like I have some insider understanding because of some shared similar experiences of having been personally involved with individuals who have struggled with the disease (See Appendix F). But I have also been puzzled by the complex nature of addiction in women. For example, why do some women stay in abusive relationships? How do I tease out the role that social, personal, and health factors play in addiction and recovery processes? This project was developed in part to continue on my path of discovery. My hope is to continue to learn from the women and to share knowledge with them.

Health care providers are in a unique position to provide care, understanding, nurturance, healing, and love to their clients. Healers can assist people with their personal journeys without trying to control their path. It is through this lens that I developed this research project.

<div align="center">Procedure</div>

The prospective participant was referred to the investigator from her clinical practice, the residential treatment sites, or the sociological research center previously described. The investigator or the research assistant contacted the participant within 24 hours of receiving her call, and explained the study and answered questions. A date, time and location for the interviews were arranged for the convenience of the participant. Interviews occurred at either a private office on the university campus which was not located in the clinic, a residential treatment program private office, or a private office at the sociology research center. When women did not appear for their

interviews, follow-up phone calls and/or letters were mailed requesting a rescheduled appointment.

At the first interview, the study was again explained, the informed consent was reviewed and signed by the participant and a copy given to her. She also received a copy of the Human Subject Bill of Rights for her records. One of two research assistants completed the interviews for all participants who were also clients in the investigator's clinical practice to alleviate the potential problem of conflicting interests. One research assistant was a doctoral student in psychology, the other was a practicing clinical social worker. Both were trained in the use of the instruments and practiced conducting the interviews on volunteers who were not used in the study. Critique of the interviews and feedback were given at regular meetings. Modifications of the open-ended interview schedule were made after group discussions with the research team.

After consenting to the study, an uncoded flow sheet was completed which included tracking information. Midway through the study, participants were also asked to sign a separate consent for release of medical record information about pregnancy and birth because the medical record departments at off-site hospitals did not recognize the research consent as adequate. Some medical record information was not available because participants left their residential treatment program before birth and their delivery site was unknown. Also, some medical records, when they were obtained, did not provide complete documentation regarding drug use, pregnancy or birth complications, or psychosocial problems. Health data was based on self-report and medical record documentation when available.

The participant was then given the pencil and paper portion of the interview to complete in the absence of the interviewer. This included a

demographic questionnaire, the NSSQ, the ISE, and the GCS. Two illiterate participants were the exceptions to this; and the interviewer read each of the questions to the participants and marked her answers for her. All instruments were coded with a number and no personal information appeared on any of them.

After the pencil and paper portion of the interview was completed, the participants completed a one to two hour taped interview. Tapes were later transcribed and assigned the same code number as the completed instruments. Field notes were written that described settings, participants, and impressions. Upon completion of the first interview, women received a $25.00 grocery voucher and were reminded that they would be contacted at approximately three months after their deliveries for their second interview.

Women were contacted two to three months after their due date to establish that they had delivered and that they were still interested in completing the second interview. A time and place was agreed upon for the convenience of the participant and the same procedure was followed as with the first interview, with two exceptions. The first was that after completion of the pencil and paper interviews, women were asked to place a mark by the initials of those individuals from both the Time 1 and Time 2 NSSQ questionnaire who used drugs and alcohol. The second was that reimbursement was given in the amount of $50.00 cash.

All participant information was coded to protect the confidentiality of the women. Coded identification was kept in a locked file separate from research materials which included the participants name (the flow sheet and the signed consent).

Four women called within a few months to a year after completing the study to inform the investigator how they were doing in their

recovery. Field notes were written after these discussions were concluded.

Data Analysis

Two types of data analysis were used to describe the factors involved with the social environment and personal resources and demands of the sample population. First, descriptive and comparative statistics were used and correlations between specified variables were examined. Second, a combination of qualitative techniques including content and thematic analysis were used to identify themes as they emerged from the words of the women themselves. These methods were used in tandem to discover similarities and/or discrepancies and to add depth and richness to the findings.

Quantitative Methods

The paper and pencil questionnaires (GCS, ISE, & NSSQ) were analyzed for descriptive statistics of the personal factors and social network and social support in order to answer research questions 1-3. Identifiers for network members on the NSSQ were expanded to include more categories for specific family members. Network members who used substances were identified and coded. Data were entered into the Statistical Package for the Social Scientist (SPSS) Version 7.5 for Windows and descriptive statistical methods were used. A statistician was consulted throughout the data analysis process and assisted with NSSQ alterations, data cleaning, statistical analysis and interpretation. Comparisons of Time 1 and Time 2 data were analyzed using parametric and non-parametric statistics where appropriate.

Qualitative Methods

Transcribed interviews were first reviewed to obtain a general feel for the data. Content analysis as described by Manning & Cullum-Swan (1994) was used to count incidents of child abuse, sexual abuse,

domestic violence, and other violence. These were coded as present or absent in order to compare the sample population to other populations cited in the literature. Episodes of substance use was also compared with what women reported on the demographic sheet. If women admitted use within the course of the interviews, these were counted for final reporting.

The interviews were then analyzed using field research strategies as described by Schatzman & Strauss (1973), grounded theory techniques as described by Strauss & Corbin (1990), and an interactive synthesis as described by Huberman & Miles (1994). Qualitative data are complex and often not readily convertible to standard measurable units, varying in level of abstraction, frequency of occurrence, and relevance to the research question (Schatzman & Strauss, 1973). One purpose for analyzing interview data with field methods is to discover the classes and properties of person, places, and events and to develop "key linkages" to refine the models or general schemes that are constructed from the data (Schatzman & Strauss, 1973). Narratives are also used to elucidate the concepts that emerged from the models. The personal stories or vignettes elucidate complex social situations (Manning & Cullum-Swan, 1994).

As themes were constructed, the data which addressed these themes were highlighted with color coding according to the general categories to which they belonged. For example, green highlights were used to mark physical locations, pink for relationships and interactions, orange for personal demands, e.g. stresses, depressions, and low self-perception, blue for personal resources , e.g. self-esteem, well-being, coping strategies, and yellow for health behaviors. Properties and dimensions of these categories were written as theoretical memos. Results from this analysis were used to highlight key findings from the quantitative data

and to add new dimensions and to analyze new concepts that emerged from the interview data as related to the research questions. The intent of the data analysis and synthesis was to explore the social environment; not to privilege one data gathering and analysis method over another.

In summary, a multi-method longitudinal approach used both qualitative techniques and quantitative analytic strategies. The social environment was studied within the context of personal resources and demands of pregnant women and new mothers who used crack cocaine.

CHAPTER IV: RESULTS

The research questions were developed (a) to describe the health, personal resources and demands, and social environment of pregnant women and new mothers who used crack cocaine, (b) to determine if there were differences between these variables over time, and (c) to assess the utility of using a multi-method approach for the study of childbearing women who use substances.

The Sample

Four residential treatment programs, a university based outpatient clinic, and a sociology research center were used for recruitment purposes. Fifty percent of the women (n = 15) were recruited from the university clinic. Some of the women recruited from this site were also concurrently in one of two residential treatment programs. Thirty-eight percent (n = 11) of the women were recruited from a residential treatment program that used the public hospital and one of the community hospitals for their births. The remaining 12% of the women (n = 3) were recruited from the research center and directly from the other three residential treatment programs. Women who were in residential drug treatment were divided among four sites. Women were planning to deliver between 5 different sites (see Table 3).

Forty-four women who met the eligibility requirements for the study were invited to participate. Two women were asked a second time with a subsequent pregnancy. Of the 14 women who did not participate, eight were African American, three were White, one was Filipina, one was Latina, and one was White/Polynesian mix.

An African American woman, a White woman, a Latina woman, and a Filipina woman declined participation at the initial request; three did not give a reason. The Latina woman stated that she was pregnant with

her second child, that her first child was crack exposed, and that she was planning to engage in outpatient recovery services and wanted to just focus on her recovery.

Ten women initially agreed to participate in the study with nine of these women making one to three appointments before canceling, not showing, or disappearing without a trace. One woman initially agreed to participate, discovered she was having twins, and then declined participation because "I have too many other things to worry about just trying to get into recovery and stay clean right now. No time for extras".

None of the fourteen women who refused to participate maintained consistent contact with either a residential or outpatient treatment program, although all of the participants did. Therefore, the sample was skewed toward a treatment population from clinic settings. Private recovery treatment program clients, private obstetrical patients and the HMO clinic population were not represented in this sample. Women who did not receive prenatal care were not represented.

The study spanned four years from January, 1994 through December, 1997. Thirty women who entered prenatal care participated in Time 1 of the study. Twenty-seven completed the Time 2 segment. This study captured 68% of the targeted women (n = 30) for participation in the first interview and a 90% retention rate by completion of Time 2 (n = 27). One woman did not complete the her GCS, ISE, or NSSQ at Time 1. She left her packet at home and the research assistant did not have an extra copy on the day of the interview for her to complete. A packet was mailed to her with a prepaid postage return envelope enclosed which she never returned even after follow-up phone calls. A total of 26 women completed both the Time 1 and Time 2 questionnaires and interviews. Of

the three women who did not complete Time 2, two were African American
and one was Latina.

Demographics (see Tables 4 and 5)

Of the thirty women who participated in Time 1 of the study,
interviews were conducted between 8.9 and 38 weeks of pregnancy (mean =
27.2 weeks) after initiation of prenatal care. Three women were in their
first trimesters (< 13 weeks of gestation), 11 were in their second
trimesters (< 28 weeks of gestation), and 16 were in their third
trimesters of pregnancy (> 28 weeks of gestation) at the time of their
first interviews. At the Time 2 interviews, women were 5.1 to 35 weeks
postpartum (mean = 15.6). Three women were interviewed at five to seven
weeks postpartum because they were leaving the state and would not be
available for interviews at three months postpartum. Twenty-three women
were interviewed between 10.3 to 22.3 weeks postpartum and one woman was
interviewed at 35 weeks. This woman was finally interviewed after failed
attempts to contact her and then several missed appointments. She
finally contacted the interview team and requested to complete the final
interview after the interview team was about to drop her from the study.

The ages of the women ranged from 20 to 44 years with a mean age
of 31.8 years. Women had completed between 8 and 18 years of education
(mean = 11.5). Sixty percent of the women were African American (n =
18), 17% were Latina (n = 5), 10% were Caucasian (n = 3), 7% were
African American/Latina mix (n = 2), the remainder were multiracial with
> two races identified.

Sixty percent of the women (n = 18) were single/heterosexuals, 13%
were significantly involved in a heterosexual relationship (n = 4), 10%
were married (n = 3), 10% were divorced (n = 3), and 7% were
single/lesbians (n = 2). Most women reported receiving less than
$10,000/year in social service benefits with only one woman reporting an

income of approximately $25,000/year. Seventy-seven percent of women (n = 23) described their occupation as none or homemaker with the remainder reporting prostitution (n = 1), cashier/clerk (n = 2), student (n = 3), and one stating that she was a professional woman in finance. Twenty-eight women were insured through the state Medicaid program. One woman reported that she had no insurance and the other reported that she had her own insurance.

<div align="center">Health Factors (see Tables 6 - 12)</div>

<div align="center">Treatment (see Table 6)</div>

Twenty percent of the women (n = 6) were not in any type of treatment at the first interview. Approximately 13% (n = 4) were in outpatient substance abuse treatment programs, one was followed through individual psychiatric services (3%), and the remainder the 19 women (63.3%) were in residential drug treatment. At Time 2, of the 26 women who responded, 35% of women (n = 9) were not in any type of treatment. One woman was only in a 12 step program, 23% (n = 6) were in outpatient treatment, and 38.5% (n = 10) were in residential drug treatment.

<div align="center">Substance use (see Tables 7 and 8)</div>

Past substance abuse was initiated as early as age four with the consumption of alcohol. First alcohol consumption for these women occurred at ages 4 through 18 (mean = 12.5 yrs.; median 13 yrs.) and 19 (approximately 70%) of the women reported consuming alcohol during their pregnancies (range = 0 to 1008 oz./wk.; mean = 96.8 oz./wk.; median = 6 oz./wk.). One woman reported, "When I was a baby and when I was growing up, my mother gave me a little glass of red wine with my meals to make my cheeks rosy (T1, #3, p. 7)." She also said that when she was a small child and her parents had cocktail parties, she would go around the room and drink the left over alcohol from bottles and glasses.

Twenty-four women (approximately 90%) reported smoking during pregnancy and stated that they started smoking cigarettes at ages 4 through 27 (mean = 12.6 yrs.; median = 11 yrs.). Eleven women reported using marijuana during pregnancy. The age range for first marijuana use for women was 10 to 22 years (mean = 14.6 yrs.; median = 14 yrs.). Seventeen women reported the use of other drugs between the ages of 10 and 27 years (mean = 18.7 yrs.; median = 18 yrs.). These other drugs included heroin, LSD, PCP, methamphetamines, and prescription medications. Only two women reported using any of these other drugs while pregnant. Finally, women reported using crack cocaine between the ages of 10 and 36 (mean = 21.5 yrs.; median = 19 yrs.).

With the exception of cigarette smoking, women generally decreased the use of substances during pregnancy and after birth. All women used crack cocaine during their pregnancies but the regular and binge use decreased during pregnancy and postpartum. Approximately 87% of women reported regular weekly use and binging before pregnancy. The remainder described themselves as infrequent or occasional users. Heavier users either quit or at least, decreased the frequency of use and the dose while they were pregnant. Only 25% of the women reported using at the postpartum interview. Even though there was use, many women said that their use was much less than prior to pregnancy and some described their one time exposures as "a last hurrah" or "one last fling" before settling into the tasks and responsibilities of motherhood. One woman said that she "dibble dabbled with it one time" after delivery when she was with some friends who were using. She said that after that one time, at two months postpartum, she hadn't used since. The women had decreased or eliminated crack use for themselves and their children.

The same trend seemed to exist with alcohol, marijuana, and other drug use. Eighty-six percent of women reported use of alcohol prior to

pregnancy, 70.4% during pregnancy, and 16.7% during their postpartum period. Eighty percent of women reported marijuana use prior to pregnancy, 42.3% during pregnancy, and no woman reported use after birth. And 58.6% of women reported use of other drugs prior to pregnancy, 8.3% during pregnancy, and no woman reported use after birth. Not all women in the study responded to the questions about their postpartum drug use, however, even if the worst case scenario was calculated and all the women with missing data were counted as users, there was still a decreasing trend in substance use from pre-birth to post-birth with all substances but tobacco.

Sexually transmitted infections and contraception (see Table 9)

Approximately 67% percent of the women had reported a previous sexually transmitted disease with 83.3% of the women reporting that they used no form of contraception prior to becoming unintentionally pregnant. Birth control use prior to pregnancy included condoms, birth control pills, or Norplant. After the birth, 33.3% of women reported no contraceptive use and 29.6% reporting sterilization. The remainder reported using birth control pills, Depoprovera, condoms, Norplant, or diaphragm.

Obstetric and Infant Health Status (see Table 10 and 11)

The number of previous pregnancies for each woman ranged from 2 to 32 (mean = 7; median = 5;) and the number of living children born ranged from 1 to 8 (median = 3). The one woman who reported 32 pregnancies was an outlier. Two other women reported 12 and 16 previous pregnancies. The remainder reported < 10 previous pregnancies. The first prenatal visit occurred between 6 and 31.7 weeks of pregnancy (mean = 15.3 weeks) and women attended an average of 9 prenatal visits.

Fifty-two percent of the babies were girls (n = 14) and 66.7% of the births were spontaneous vaginal births (n = 18), with a cesarean

section rate of 18.5% (n = 5) which was comparable to a 19% cesarean section rate in San Francisco in 1997. Approximately 56% (n = 14) of the infants had no documented birth complications. Two infant records did not indicate whether or not complications were present. Three infants were missing from the data because their mothers left the study. Complications for the remaining infants included 12% prematurity (n = 3), 4% IUGR (n = 1), 4% tachycardia (n = 1), 8% meconium (n = 2), 4% sepsis (n = 1), a cheek laceration from a c-section (1), and preterm fetal demise (2). San Francisco records for 1996 indicated infant complication rates of 9.8% for prematurity, 6.7% for low birth weight, 11% for meconium, and 2% for sepsis. There was a moderate inverse relationship between the number of prenatal visits for study participants and infant complications ($\underline{r}$ = -.48).

Median scores more accurately reflected the characteristics for mothers and babies in the following categories. Women had one to eight living children after delivery. They entered prenatal care at 13.8 weeks of pregnancy and had 9 prenatal visits. New mothers spent 2.5 days in the hospital. The range for hospital days for the mothers was 1 - 47 days. One mother spent 47 days in the hospital for premature labor.

Of the 27 women who completed the Time 2 interviews, 2 women had stillborns. One woman had a severely IUGR stillborn fetus at 28 weeks gestation which weighed 330 grams. A second woman had premature rupture of membranes at 22 weeks gestation that had a fetal heart rate at the time of admission to the hospital. She was given the option of hospitalization, bed rest, and tocolytics for the continuation of the pregnancy or induction and termination. She chose termination. She delivered a 450 gram stillborn. Although these two women had premature births with complicating factors, they were coded only as fetal demises for data reporting.

Newborn five minute APGAR scores for the live born babies had a median of 9. Babies spent a median of 2 days in the hospital. The two stillborn babies skewed the mean birth weights and gestational ages and were eliminated from the calculations thus providing the mean _live_ newborn birth weights and gestational ages. Mean birth weight for live born newborns was 3033 grams (medium = 2993 grams) with a mean birth gestation of 38 weeks (medium = 39 weeks). One woman had a set of twins (male and female genders).

Violence (see Table 12)

Approximately 66.7% of women reported a previous history of child abuse; 63.3% reported a past history of adult sexual assault; 66.7% reported a history of domestic violence in current or past relationships, and 50% reported a history of other violence, for example assaults and robbery. Eighty percent of women had previously been involved with mostly misdemeanor crimes, usually in the forms of prostitution, drug dealing, theft and shop lifting.

Resources and Demands (see Tables 13 - 16)

Depression and Well-being - GCS (see Tables 13 and 14)

Women displayed more depressive symptoms during their pregnancies than they did after their births. Mean depression at Time 1 was 43.3 (SD = 21.1) with a range of 9 to 85. Mean depression at Time 2 was 32.1 (SD = 17.7) with a range of 7 to 78. A score of less than or equal to 25 was the cutoff for depression with values over 35 representing depression. Internal consistency reliability scores for the GCS were good at Time 1 (alpha = .94) and at Time 2 (alpha = .93).

Data were then summarized by the depression/well-being categories previously described in the methodology chapter. In the first categorization, seven levels of depression and well-being were created ranging from "Extremely low depression/Extremely high well being" to

"Extremely high depression/Extremely low well-being" (see Table 14).
These categories were then collapsed into three categories called "Low
depression/"High well-being", "Average well-being", and "High
depression/Low well-being".

At Time 1, 62.1% of women (n = 18) reported depressive symptoms
and low well-being. Approximately 38% (n = 11) reported either average
well-being or low depression/high well-being. Using the seven categories
of depression and well-being, 41.4% of these women (n = 12) at Time 1 had
scores that qualified them for suicidal risk/ideation (scores > 50).

At Time 2, 37% of women (n = 10) reported depressive symptoms and
low well-being. Approximately 63% (n = 17) reported either average well-
being or low depression/high well-being. Using the seven categories of
depression and well-being, 22.2% of these women (n = 6) at Time 2 had
scores that qualified them for suicidal risk/ideation (scores > 50).
This represented a decrease by about half in the reported high
depressive symptoms at Time 2. Women reported more depressive symptoms
during pregnancy than they did during their postpartum period ($\underline{M}$ = 11.1,
$\underline{SD}$ = 16.9), $\underline{t}$(25) = 3.3, $\underline{p}$ = .003.

Self-esteem - ISE (see Tables 15 and 16)

Women reported lower self-esteem during their pregnancies than
they did after their births. Mean self-esteem at Time 1 was 39.1 ($\underline{SD}$ =
22.1) with a range of 12 to 84. Mean self-esteem at Time 2 was 28.8 ($\underline{SD}$
= 18.3) with a range of 3 to 69. A score of less than or equal to 25 was
the cutoff for high self-esteem with values over 35 representing low
self-esteem. Internal consistency reliability scores for the ISE were
good at Time 1 (alpha = .95) and at Time 2 (alpha = .94).

Data were then summarized by the self-esteem categories previously
described in the methodology chapter. In the first categorization, seven
levels of self-esteem were created ranging from "Extremely low self-

esteem" to "Extremely high self-esteem" (see Table 16). These categories were then collapsed into three categories called "Low self-esteem", "Average self-esteem", and "High self-esteem". At Time 1, 51.7% of women (n = 15) reported low self-esteem and 31% of women (n = 9) reported high self-esteem. Using the seven categories of self-esteem, 27.6% of women (n = 8) reported very low levels of self-esteem (scores > 50).

At Time 2, 40.7% of women (n = 11) reported low self-esteem and 44.4% of women (n = 12) reported high self-esteem. Using the seven categories of self-esteem, 11.1% of women (n = 3) reported very low levels of self-esteem (scores > 50). Women reported lower self-esteem during pregnancy than they did during their postpartum period ($\underline{M}$ = 10.8, $\underline{SD}$ = 19.5), $\underline{t}$(25) = 2.8, $\underline{p}$ = .009.

Depression and self esteem total scores were correlated at Time 1 ($\underline{r}$ = .79) and at Time 2 ($\underline{r}$ = .76) which was interpreted as low depression associated with high self-esteem. At Time 1, 27.6% of women had low depression and high self-esteem and 44.8% of women had high depression and low self-esteem. At Time 2, 40.7% of women had low depression and high self-esteem and 33.3% of women had high depression and low self-esteem.

During the pre and post-birth interviews, women described both positive and negative self-perceptions and feelings. How they felt about themselves were related to the events they were describing (a) from their childhoods through their adult lives, (b) as children and later as mothers, and (c) as users of substances and women in recovery.

Concepts Generated By Interview Data (Resources and Demands)

Negative Feelings and Self-perception (Demands)

Although some women used the terms "depressed" and "low self-esteem", most of the women described feelings associated with depressive symptoms or low self-esteem such as "feeling low or down", "withdrawn",

"tired", "being a real secretive person", "getting real tearful", "being overwhelmed", "being excessively tired", "miserable", "stressed", and "sad". Some women described "blacking out" or "not remembering" events from their past.

> Woman 6: I remember the babysitter making me and my brothers have sex with each other. I don't think I've ever told anybody this. I was really young, maybe six or seven.
>
> Interviewer: Did the babysitter get involved with it too?
>
> Woman 6: Probably did. I don't remember. (T1, #6, p. 11-12)
>
> Woman 12: I used to black out all the time. For years, I've been blacking out. I didn't know why...but from what I've been finding out (in recovery) is that maybe I was just trying to get away from the reality. My uncle used to abuse me. He used to fuck me too. I was like 15, but I never said anything about it and then I used to feel like they (family) were going to say that it was my fault (T1, #12, p. 4).

Women also reported feeling scared, worried, and guilty especially during their childhoods when they were being abused or molested and later when they were mothers and thought their drug use might have hurt their children or their unborn babies.

> Woman 12: My father was always drunk. I couldn't tell him (about being raped by an uncle at age 15) because I used to fear that he was going to tell me that it was my fault...I told him a few years ago. He told me it was my fault (T1, #12, p. 4).
>
> Woman 1: I was scared because during my pregnancy, I was trying to keep clean and I was feeling a lot of guilt. So I was checking to see if all her fingers were there...just checking to see if she was OK.(T2, #1, p. 1).

Woman 4: I was worried to death when I was out there smoking. I thought I was crazy, I thought I was killing my baby. I'm not giving it a chance (T1, #4, p. 14).

Woman 6: At home I just let him (3 yr. old son) do what he wanted to do. I've been crying and I felt guilty for that last six months that I was using (crack and alcohol) and I kept him in the house all the time, too (T1, #6, p. 13). Now (in a residential recovery program) I'm trying to take control again and he doesn't like that. But I love him and I'm starting to take time out with him (p. 14).

At the more extreme end, some women described auditory hallucinations which could be managed with medication. One woman said, "I have been hearing voices and I have been a little snaked[2] but I have been fightin' the feeling. I've been scared to take (medication) because I don't know what it'll do to this baby" (T1, #28, p. 41). Even with serious psychiatric disturbances, women were concerned about the risks of taking medications while pregnant. They weighed these risks against the amount of psychiatric discomfort they experienced when deciding to continue medicating or not.

And finally, other women described feeling "suicidal" or feeling like they were going to die or wanted to die. They discussed their "death feeling" during discussions about child abuse, sexual assaults and physical assaults and were reality based. For example, one woman, whose facial, abdominal, and arm scars looked like a road map described a scene where she had just been knifed and almost killed by her boyfriend. Her young daughter later told her that her heart had stopped and the paramedics were pumping it (T1, #12, p. 14).

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[2]"Snaked" was said while she quivered her body. It was used within the context that it was bothersome to her.

Women also expressed "death feelings" when discussing birth fears. For example, one woman had almost died from a ruptured placenta previa after an all night crack binge with a previous pregnancy and had fears that she might die during the current pregnancy. Negative feelings were described from childhood through their adult lives. Interview data provided evidence that these women suffered with post-traumatic stress disorder. Serious psychiatric disorders, including auditory hallucinations were also described by two of the women. One who was in treatment during the study and receiving medication said that the voices told her to injure herself without medication and diminished to undistinguishable whispers when she received medication. The other woman was not in treatment or on medication and her auditory hallucinations also told her to harm herself.

Positive Feelings and Self-perceptions (Resources)

Women also reported positive feelings and self-perceptions. As children, women described themselves as good girls, good students, innocents, and survivors. For example Woman 19 said, "I was a straight A student and a good girl. I didn't know nothin' about drugs and stuff (until she was gang raped by five guys from school)" (T1, #19, p. 3). Woman 21 said, "I needed to know how to survive, and the only way I knew was the streets." Her mother was an addict and left her home alone as a child "just laying there cold or hungry or crying" (T1, #21, p. 5).

As adults women also describe positive qualities in themselves and positive feelings. For example, one woman stated, "I can be a very responsible person when I need to be (T1, #1, p. 2)." Another woman described herself as "happy go lucky, always in a good mood, and always positive (T1, #3, p. 5)". Women also described themselves as caring and loving especially where their children were concerned. They did their best to give them food, clothing, and extra treats. Some women were also

able to make the connection that they were not as good with their children when they were using crack. Women who were in recovery tended to describe themselves in more positive terms than when they were using. They "felt good", "liked themselves better", "felt stronger", and "felt happy".

As parents, one woman summarized it as, "All parents who use drugs, aren't bad parents. Some of them don't even use around their children and some of them don't abuse their children (T2, #2, p. 19)." Women cared about their babies and about how they mothered their children and many of their positive feelings and self-perceptions came from their ability to be good mothers or just to enjoy motherhood. For example Woman 1 said, "I'm feeling better...I'm so focused on trying to be there for her (daughter) all the time" (T2, #1, p. 6-7). Woman 22 was even able to find happiness in spite of the stress of motherhood. She said, "I'm happy to be in my little apartment, you know, bored with six kids, pulling my hair out. I count my blessings. I'm sober enough to enjoy my misery. And I'm alive. And I am here to enjoy watching my children grow" (T2, #22, p. 23).

<div align="center">Social Environment (see Tables 17 - 28)</div>

The social environment included the network, support, and the physical environment. Network and support data will first be presented using the NSSQ results.

<div align="center">Social Network - (see Tables 17 - 21)</div>

It appears that there was stability in the total number of network members listed at Time 1 (n = 228) and Time 2 (n = 231). However, there were fluctuations in members entering and leaving the network. Forty-six percent of the individuals listed at Time 2 were new to the network and 50% of the network members listed at Time 1 were gone at Time 2. One third of the network stayed the same at Time 1 and Time 2.

The network consisted of spouses/partners and in-laws, biological family, and non-family members. The number of women who reported members in each of the network categories are reported in Tables 17 and 18. At Time 1, 13 spouses, 5 in-laws, and 113 biological family were listed and at Time 2, 13 spouses, 7 in-laws, and 118 biological family were listed. Thirty-nine percent of partners had a history of substance use at Time 1 and 31% at Time 2 (see Tables 19 and 20). Twenty-seven percent of the family had a history of substance use at Time 1 and 22% at Time 2. This reflected a trend toward eliminating substance users from the family network after the baby was born.

Of the 57 friends listed at Time 1, 12% (n = 7) were substance users. Of the 51 friends listed at Time 2, 20% (n = 10) were substance users. There was also an inverse relationship between self-esteem and the number of substance users in the network at Time 1 (r = -.32) and at Time 2 (r = -.45) meaning that self-esteem was higher with more substance users in the network. This finding could be a reflection of women in recovery establishing friendships with other women in recovery. Interview data confirmed that women developed relationships with their room mates in the residential treatment programs. Health care providers, counselors, and spiritual leaders were not identified as having a history of substance use, yet many of the counselors in the residential treatment programs were known recovering addicts. Women may not be aware of past substance use in these network members because of the mandates for maintaining the professional relationship.

Women varied in the amount of contact they had with network members with the least frequent contact being with neighbors, health care providers, and spiritual leaders. The trend toward generally reducing family member contact while increasing contact with friends at Time 2 may be related to women reducing active substance users from

their networks. Also of interest is a reduction in the amount of contact with health care providers, counselors, and spiritual advisors at Time 2 (see Table 21).

Social Support (see Tables 22 - 28)

Functional support as defined by the NSSQ is the combined score for two tangible aid and four emotional support questions. Scores for each question ranged from 0 = "None" to 4 = "A great deal". Scores for each network member could range from zero to 24 to give a total functional support score as described in the methodology chapter. Group scores were obtained at Time 1 and Time 2 for each of network category and the mean score obtained for average functional support. When only one member was listed in a category the total score and the average score were the same.

Twenty-nine women responded to Time 1 and 26 women completed Time 2. One women who responded to Time 1 by answering that her mother was her only source of support said she had nobody in her support network at Time 2 and thus could not respond to the questions. The interview data from this participant at Time 1 demonstrated that she was living in a homeless shelter, actively using crack, and her mother had her other children in custody. She would go to her mother's house occasionally for meals or money and to check on her children. After the baby was born, the woman was living with her mother and not using drugs, and her mother was providing meals and childcare. Yet this woman said, "No...no...no. She need somebody to be a support for her. No...she definitely can't be mine (T2, #28, p. 6). My mother's judgmental...she will say somethin' that's not...any kind of support. It sounds very mean (p. 7)." Yet to outside appearances and in terms of this woman being able to remain clean and sober and have a relationship with her children, it seems the mother is supplying a very important supportive role in her life.

In order to better understand the combined scores, each question for tangible aid and emotional support are described as the percentage of how women answered each of these questions (see Tables 22 to 23). The support categories for both tangible and emotional support were collapsed into three categories called "Low support", which included the responses "none" and "a little bit", "Moderate support", which remained the same, and "High support", which included the responses "quite a bit" and "a great deal" (see Tables 24 and 25).

Tangible Aid (see Table 24)

Approximately 31% of women at Time 1 perceived that they would receive low support and 27.6% high support for borrowing money or getting a ride. Approximately 17.2% of women at Time 1 perceived that they would receive low support and 41.4% of women perceived that they would receive high support for help if they were confined to bed. Overall, at Time 1, 24.1% of women reported low support for tangible aid and 34.5% reported high support for tangible aid.

By Time 2, 11.5% of women perceived that they would receive low support and 34.6% high support for borrowing money or getting a ride. Approximately 23.1% of women perceived that they would receive low support and 46.2% high support for help if they were confined to bed. Overall, at Time 2, 17.3% of women reported low support for tangible aid and 40.4% reported high support for tangible aid. Both categories for tangible aid improved at Time 2. There was a general improvement in the overall combined tangible support score at Time 2. There was also a relationship between receiving tangible support at Time 1 and being in a treatment program at Time 1 (r = .40), but not at Time 2 (r = .07).

Emotional Support (see Table 25)

Overall, at Time 1, 3.4% of women reported low emotional support and 61.2% reported high emotional support. Of the four high emotional

support categories, being liked/loved and being respected/admired were reported by approximately 69% of the women. The lowest percentage of support in the high emotional support category was in the ability to confide (48.3%).

Overall, at Time 2, none of the women reported low emotional support and 72.2% reported high emotional support. Of the four high emotional support categories, being liked/loved and being respected/admired were reported by approximately 80.8% of the women. The lowest support category was in having someone agree with her thoughts and actions (61.5%). Approximately 65.4% of women reported the ability to confide, which was an improvement from Time 1. All categories for emotional support improved at Time 2. There was a general improvement in the combined emotional support score at Time 2. There was no relationship between emotional support and being in treatment at either Time 1 or Time 2. Emotional support and tangible support were highly correlated together at Time 1 (r = .85; p < .01) and at Time 2 (r = .94; p < .01). The frequency of contact at Time 1 was related to tangible support at Time 1 (r = .89) and the frequency of contact at Time 2 was related to tangible support at Time 2 (r = .93). Also the frequency of contact at Time 1 was related to emotional support at Time 1 (r = .96) and frequency of contact at Time 2 was related to emotional support at Time 2 (r = .95). This was interpreted as higher tangible and emotional support scores were related to having more frequent contact with network members.

In summary, responses to the tangible aid and emotional support questions were skewed toward the positive which reflects the nature of the NSSQ. Women were asked to list only those network members who provided them with support. Tangible aid and emotional support were perceived more positively at Time 2 than at Time 1. Women also perceived

less tangible aid than emotional support. And finally being in frequent contact with network members was related to higher tangible aid and emotional support scores.

Average Functional Support (see Tables 26 and 27)

The average functional support score was derived from the combination of emotional support and tangible aid. Average functional support scores for family and non-family network members are reported on Tables 26 and 27. Average functional support scores ranged from 0-24 reflecting the scaling on the NSSQ.

At Time 1, mean support scores for mothers (17.4), sisters (17.3), brothers (18.1), grandmothers (18.5), aunts (17.3), daughters (18.6), sons (19), and other family members (17.2) reflected above average support. Fathers scored lower with a mean of 14.3, reflecting only moderate support. The mean support score for all family members was 17.9. Mean spouse/partner support was 17.4.

For non-family members at Time 1, mean friend support was 17.2. The least amount of mean functional support was perceived from health care providers (13) and the most for spiritual advisors (19.9). Counselors and therapists had a mean score of 17.7. With the exception of health care providers, all non-family functional support was also perceived as high. However, during the interviews, women usually spoke highly of their nurse practitioners and some of the physicians who provided their prenatal care. Important aspects of support were identified through interactions with the nurse practitioners. These included, talking and listening about the addiction, supporting and encouraging positive changes, imparting information about the health of their babies and recovery hurdles, not being judgmental or discriminatory, being a friend, being kind and caring, spending time and not rushing interactions, and being an advocate.

At Time 2, mean support scores for mothers (17.9), fathers (19), sisters (16.7), brothers (19.6), grandmothers (23), aunts (20), daughters (17.3), sons (15.8), and other family members (19.6) generally reflected more perception of functional support than at Time 1. Father's scores improved by the most at Time 2 with most family member's scores improving from Time 1 to Time 2. Sisters, daughters and sons had lower scores at Time 2. The mean support score for the family was 18.2. Mean spouse support was 19.5 which reflects an improvement from Time 1 to Time 2.

For non-family members at Time 2, mean friend support was 19.5. The amount of perceived functional support improved the most for health care providers (17.1). Counselors and therapists had a mean score of 18.9 and spiritual leaders had a mean score of 19.5. These four groups of network members were viewed more positively in the amount of perceived functional support at Time 2.

Mothers provided 12.1% of the functional support in the network, daughters, 9.5%, sisters and other family, 8.3% each at Time 1 (see Table 28). By Time 2 mothers provided only 5.9% of the functional support in the network, daughters 7.5%, sisters, 5.4% and other family, 6.4%. The biological family provided 53.7% of the support at Time 1 and 41.7% at Time 2. Friends provided 23.3% of the functional support at Time 1 and 28.2% of the support at Time 2, with total non-family support increasing from 34.7% at Time 1 to 44.3% at Time 2.

Generally, perceptions of average functional support seemed to improve at the time of the postpartum interview in most family and non-family categories. This was also the same time that self-esteem scores were higher and depression scores were lower. Participants were also less likely to be in any type of treatment program at Time 2. Also, the biological family provided the majority of functional support at Time 1,

but non-family provided the majority of the support at Time 2. There was a relationship between being in treatment at Time 1 and the perception of family support at Time 2 (r = .56). There was also a relationship between new network members at Time 2 and being in treatment at Time 2 (r = .53).

The Relationships Between Tangible Aid, Emotional Support, Depression, and Self-esteem

Pearson product-moment correlations calculations were tabulated for tangible aid, emotional support, depression, and self-esteem at Time 1 and Time 2. There was an inverse relationship between emotional support and depression at Time 1 (r =-.5) and at Time 2 (r = -.62). There was also an inverse relationship between tangible aid and depression at Time 1 (r = -.43) and at Time 2 (r = -.58). The relationships between self-esteem and emotional support were small at Time 1 (r = -.29) and at Time 2 (r = -42). There were also small to moderate relationships between self-esteem and tangible aid at Time 1 (r = -.16) and at Time 2 (r = -.36). But the direction of the relationships were the same.

The Relationships Between Average Functional Support, Depression, and Self-esteem

The overall average functional support demonstrated a small to moderate relationship to depression at Time 1 (r = -.12) and at Time 2 (r = -.38) but did not reach significance. And the overall average functional support was not related to self-esteem at Time 1 (r = -.02), but it was related to self-esteem at Time 2 (r = -.42, p < .05). The average functional support for the family was not significantly related to depression or self-esteem at Time 1 or Time 2 (T1 x depression, r = -.2; T1 x self-esteem, r = -.06; T2 x depression, r = -.39; T2 x self-esteem, r = -.41) even though there appeared to be some moderate

relationships. The partner was the only individual family member who demonstrated a relationship between average functional support and self-esteem, but only at Time 1 (r = -.6) (T2, r = -.03). There were no relationships between average functional support from individual family members and depression at Time 1 or Time 2.

With the exception of the partner and self-esteem at Time 1, average functional support scores for the remainder of the network categories did not correlate well with depression or self-esteem at either Time 1 or Time 2. However, there were moderate relationships between total functional support scores and depression scores at Time 2 only for total family (r = -.56), sisters (r = -.49), brothers (r = -.47), other family (r = -.43), and friends (r = -.42). Otherwise, total functional support scores for all network categories did not correlate well with depression at Time 1 or self-esteem at Time 1 or Time 2.

The partner's support was related to self-esteem at Time 1 and having more volume of family and friend support during the postpartum period was related to less depression. Siblings appear to be important in the provision of that postpartum support.

Concepts Generated from Interview Data (The Social Environment)

Supportive aspects of relationships are those components of the personal network that provide material services, informational assistance, and emotional support. Although women described these positive elements in their support network, there were also frequent descriptions of conflict, violence, betrayal, and abuse. Interview data confirmed the complexity of the network and support functions but were sometimes in conflict with the instrumented data. For example, one woman identified two women in her network on the NSSQ, her mother and the juvenile court case worker who had known her for many years. Both of these women received high support scores for functional support.

However, during the interview, this same woman described a mother who used drugs, prostituted, and was unable to provide heat, electricity, food, or safety for her daughter.

> Woman 21: My mother would be having sex with a guy, or she'd be giving a guy a blow job...and that hurt me. I used to see men beating up my mother and I used to try to kill them...I didn't know my mother was shooting drugs (T1, #21, p. 6)...she used to take off all my clothes and whip me with the extension cord (T1, #21, p. 6).

The daughter also described an episode when she was 12 to 14 years old. This episode provides some insight into the daughter's affiliation with her mother. Although she is hurt, embarrassed, and whipped, she still loves her mother.

> Woman 21: I used to find my mother naked, you know, just laying, just on the grass or something, you know, drunk (p. 5; line 37-38)...laying on the streets, drunk. And I would be with my friend and I'd be like, 'Damn, there goes you mother again'...I can remember being embarrassed a lot. I can remember being talked about. I can remember not really giving a fuck and just picking my mother up and say, 'That's my mother' (T1, #21, p. 5)...but I loved my mother no matter what she's done to me (p. 5).

It is interesting to compare the woman who did not view her mother as supportive with this woman who does. The first woman reported no support from a mother, who by outward appearances was at least providing tangible support. The second woman reports receiving support from a mother who does not seem to demonstrate any behaviors that would even resemble support.

During interviews, women reported that important figures in the network included mothers, partners (usually male in this population),

siblings, and children. The first three categories were viewed as either
supportive or not supportive, and when not supportive, were often
described as violent, neglectful, abusive emotionally, physically,
and/or sexually. One woman described her mother as "worse than a "1"
(not at all)" on the NSSQ when asked to complete the instrument.

Children seemed to be the most likely people to motivate recovery
of all the personal network members, even though raising them was viewed
as difficult, worrisome, and troublesome at times. A typical response
about drug use in pregnancy was, "I did worry about my drug use while I
was pregnant. What made me stop using drugs while I was pregnant was
because it was not right for one thing, it wasn't fair towards the baby"
(T1, #8, p. 4).

Some of the women describe their children as if they are adults,
and listed their very young children and babies as support people on
their NSSQ network list. Role reversal seemed to be an issue as women
assign adult attributes to sometimes very young children. One woman
described her children as "really spoiled...and...extra rotten...I feel
like they're taking advantage of me" (T1, #2, p. 2). This woman had a 16
year old daughter who had a baby herself the year after her mom's baby
was born. She described several interactions with this daughter where
the daughter was chastising her for going out with "crackheads" (T1, #2,
p. 6). The daughter reprimanded the mother for not cleaning up the 10
year old brother who was "dirty and running the streets". The daughter
told her, "He looks like something homeless and he's embarrassing the
family" (T1, #2, p. 4), then the daughter cleaned up her younger
brother.

Another woman described how she felt a one to four week old baby
would die if left alone in the jungle "that baby is going to lay there
and die" but an eight to ten month old baby would survive because "it

could crawl. It could get up and do things...put something to their mouth (to eat)" (T2, #27, pp. 14-15). When the interviewer expressed surprise at this notion, she responded, "Yeah, in the jungle, I mean, you don't have bleach laying around and shit like that." Then she described a movie she saw on television where an adolescent boy and his dog were stranded in the wilderness and survived by eating mice and bugs. She did not seem to think there was a difference between the abilities of a ten month old baby and an adolescent to survive in the wilderness.

Women felt guilty about some aspects of mothering their children. One woman said that hearing the harsh reality of what she had done to her children pushed her to recovery: "taking from the kids physically and emotionally. Taking from the time that I'm **not** spending with them. Hurting them more and more. Hearing them cry, "Where's mommy?". Taking happiness, their childhoods, and causing them pain and misery. The children are important in my recovery." She also stated that recovering women "need to leave friends, situations, husbands, and boyfriends that are not healthy for you."

Many women described ways in which they destroyed the trust in the relationships with family and friends who were not using. They felt that an important part of recovery was proving that they were committed to continuing recovery and rebuilding trust in their relationships. One woman described the nature of a crack addict by saying crack made a person "scowless[3]" or changed from the person that he/she was..."a person that you just couldn't trust". She had a sister who was a crack addict. She and her sister had enjoyed a close relationship prior to her

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[3]"Scowless" is the phonetic spelling for the term this woman used to describe either "scandalous" or "scurrilous" behaviors from her sister. It was used in the context that it was not good and counterproductive to a healthy relationship.

addiction. This participant described her sister as "scowless" since she became addicted.

> Woman 4: She lied behind my back. I loved her more than I loved my mother. She was like a mother to me. She was my only sister and the crack came between that. It seemed like crack was her love and I wasn't anymore. And I didn't understand that, I didn't know how to deal with it...this is interfering with us...riling us...she couldn't see it, or it didn't matter to her at that point. I just couldn't take it anymore...she showed me that crack was more important to her than I was (T1, #4).

Having drug free supportive relationships were important, but one woman stated that her drug free husband would try to motivate her, support her and coax her, but ultimately, the decision to go clean and stay clean came from her and she had to do it herself (with the help of God). So it is likely that although personal networks influence addiction and recovery, these networks can't do it all and personal factors are involved with the process as well.

Other elements of the social environment were identified as important by the some of the women during the interviews. These included (a) the incorporation of non-corporal entities (e.g. God and the Devil) into the network, (b) the physical environment, and (c) the element of "time". Because these themes emerged strongly in the interview data, they will be presented here.

"God" As a Member of the Support Network

Several women described the importance of "God" as a support in their lives. Some women used prayer and their connections to their churches and its members in their recoveries. Other women had a more personal relationship to their god and viewed this persona as an active participant in their day to day life and recovery.

Woman 1: "I don't know if God is in his place. Maybe he made it that way so that I can get the help I needed to take care of myself. Because if I wasn't, I might be using today" (T2, #1, p. 9).

Woman 2: "I thank God I never had to steal or take from my kids. I thank God for where I am now" (T2, #2, p. 9).

Woman 3: "It's like God saw me pregnant and got me arrested because it's time to settle down" (T1, #3, p. 4).

Woman 4: "I used to pray God to help me to help myself...I hated myself with a passion. I wanted to die. If it wasn't for me believing in God and that one day he would wake me up and I would have another chance to correct my life, I would have killed myself. That's how drastic it is" (T1, #4, p. 6).

This woman later described how she had had a tubal ligation and reversal without being able to conceive for 20 years. "All of the sudden, of all times to become pregnant...it had to be God, because, why now (while she was using drugs)? I was getting older and older and can't think of nothing but old Elijah (helped her to become pregnant)" (T1, #4, p. 12). Another woman had asked herself, "Why did God make me get pregnant again" (T1, #27, p. 33)?

God was not the only supernatural network member. Women also described the Devil as playing a role in their lives, usually as a deceptive tempter. He was sometimes associated with slips and relapses. For example, one woman said, "I'll show you how the devil works" (T1, #27, p. 46). The she proceeded to disclose how a drug dealer appeared in her back yard and provided her with crack which she used. Immediately after using, she was in the hospital hemorrhaging with a ruptured placenta previa. She seemed to view this as a set-up by the devil.

The belief in spiritual beings, either good or malevolent, played a role in the lives of these women. Usually references to these beings occurred within the context of temptation for substance abuse or assistance with recovery. Also, it is interesting to hear women describe God as an active participant in making them pregnant.

Health Care Providers As Network Members

Health care providers, especially nurse practitioners, were generally viewed positively by the participants. It was important to the women that their care providers were knowledgeable about addiction, that they provided helpful and appropriate information about addiction in relationship to their pregnancies, that they provided tests to determine the health of the baby, and that they cared.

Women spent much time discussing the caring aspects of their interactions with their nurse practitioners. The caring aspects manifested as (a) spending time talking about personal issues, addiction, life choices, and recovery efforts, (b) being respectful, non-judgmental, and non-discriminatory, (c) not giving up on them and encouraging them to keep trying even when they relapsed, (d) being always available, and (e) advocating for them as allies in an unfriendly system.

Women who had caring providers said that the experience helped them feel (a) stronger, (b) better able to stand up for themselves, (c) better able to continue their recoveries, (d) happy and eager to attend prenatal visits, and (e) that they had someone who cared about them. As one woman said, "Caring will help save people because when you don't have that support, it makes you run to drugs. The drugs take everything away. This is all about the drugs and that just makes you go down, down, down, and more and more hate yourself. Then it makes it so hard that you can't see your way up. I think it's great for other people to care about

each other and try to do the right thing for them. Sometimes you don't have people or family you can get it from. You need it from somebody" (T2, #4).

There were several illustrative examples in the interview data of this caring aspect. For example, one woman was involved with an altercation with a laboratory person which resulted in the lab calling the police. The nurse practitioner advocated for her and helped bring the situation to a peaceful conclusion. She said, "In all my years, I have never had anyone, let alone a white woman, stand up for me. If (the NP) hadn't done that, I would have picked up 48 ounces at the corner liquor store on my way home and relapsed" (#26). Another woman said, "She (NP) knew the month I was clean. She would say good things and congratulate me on my clean times. I went back out (relapsed) and came back and she was still there (for me). It made me feel good to have her care" (T2, #1).

Some of the women saw their nurse practitioner as a friend to them.

> Woman #3: "She was kind of a friend to me. We formed a friendship. She took care of me" (T2, #3)

> Woman #4: "She was like a friend to me and she still is. It was so encouraging with her because she is just like I could sit and talk to her. She would always inquire if I was messing around and I would tell her the truth. She's really something else" (T2, #4).

Having a caring relationship with a health care provider encouraged continued recovery efforts and made women look forward to their prenatal visits and keep their appointments. Conversely, when women had non-caring interactions with health care providers, they felt "discriminated against" because of their drug use and angry. For example, one woman described an incident after her baby was born and had

to stay longer in the hospital than she did because of meconium aspiration and an infection.

> Woman #5: "They didn't support me at (the hospital). They couldn't room me in a room. I had to sleep in waiting rooms, conference rooms...AAHHH...I felt kinda discriminated against by the hospital surrounding being able to stay with the baby while he was there. They had to call the police on me. I was trying to break something over their head...I had my purse (swinging at the staff)...and everything was a conspiracy. I called it the hospital conspiracy.
>
> Interviewer: What did you want from them?
>
> Woman #5: A room. A room...just a room with a TV and a phone" (T2, #5).

Another woman describes a scene in the delivery room where the baby was having some signs of distress while she was pushing.

> Woman #3: "Two Filipino nurses were screaming at me...driving me crazy saying, "You're stressing her!" They were freaking me out. Then I wanted to know if it (baby) was a he or a she and nobody would answer me. I asked if she was OK and no one said anything" (T2, #3).

In both of these cases, the women felt that their needs and concerns were not being addressed. This was a source of frustration and anger which resulted in one woman using physical force to make her point.

Health care providers were low scorers at Time 1 on the NSSQ. However, following fathers, health care providers demonstrated the second largest increase in average functional support at Time 2. Part of the score improvement could be a function of women not knowing their health care providers well enough at Time 1 to judge the relationship. By the second interview, many of the women participated in intensive

prenatal care with one continuous provider. Health care providers seemed

to have an impact on the way recovering women viewed themselves and

participated in health promoting activities.

Physical Environment

The physical environment was an important factor in women's

substance use, recovery, self-perception, and utilization and perception

of their network and the support provided within the network. Interview

data provided the context within which the previously presented data

should be considered. The physical surroundings included the homes and

neighborhoods of the addicted women as well as recovery programs. Each

influenced the women in different ways.

Physical Environment - Outside of Treatment

The physical environment provided the settings where women

experienced positive and negative interactions with their social

network. The physical environment was also described as a cue that

triggered substance use. For example, one woman stated that it was easy

to use when all you had to do was look out your window and you see a

deal going down and all you had to do was walk out your front door and

score. Another woman stated that all she had to do was make a deal out

her bathroom window which faced the street where crack was readily

available. Many of the women also used and/or sold drugs within their

homes and neighborhoods. One way of getting drugs and/or money was to

allow other crack users to use their homes for the sale or use of their

drugs (crack houses).

Physical Environment - Residential Programs

When women first entered residential treatment programs, they

generally viewed residential programs as safe and structured

environments away from the triggers of their previous crack-using

environments. Programs provided counseling, parenting classes, life

skills classes, financial assistance, and networking with community services. Each residential program offered varying intensities of structure in their program.

One program was highly structured. The house was clean and organized. There was always a general sense of "being busy" as women were coming and going in the halls. Counselor-resident interactions were observed in public places and on some occasions dealt with incidents that resulted in "consequences" or a loss of privileges. There seemed a general lack of privacy and confidentiality.

Women had to account for most moments in the their lives from awakening to going to bed. They had assigned chores to complete in the house, mandatory child-care time in the nursery, classes, groups, individual counseling sessions, and medical appointments. There were sign-in sheets to log when they left and re-entered the house. There were strict consequences when infractions were committed.

Some women felt that they thrived under the strict structure. When women described how they spent a typical day, the discourse included a long litany of each moment in the day which included: "wake up, eat breakfast, do morning chores, go to medical appointments, have lunch, do clean-up, go to group and counseling meetings, go to education classes, have dinner, have evening group, veg out for one tv show, go to bed...and during all this you also have to take care of the baby." The first 90 days of "restriction" and constant supervision of activities seemed difficult even for the women who were self-motivated for recovery.

Women reported that group sessions were sometimes conducted with one resident sitting in the center of the room in a hot seat and other women and counselors "breaking down" her defenses and calling her on her drug use and denial. Women who left this program reported that it was

too structured for them and that they felt like prisoners. Some women also reported that they were treated more like children than as adults with a disease.

Another program operated more as a "flop house" for the women. The women reported that the only structured component in the program was one three-hour support session per day for residents. Women were also assigned to chores. Women in this program also reported feeling locked up like in jail because of boredom, not structure. These women expressed an interest in wanting to get out and finish their educations and use their down time in more productive ways. The house where the women stayed was clean but the furniture was shabby and torn in the communal living room. The dining room was crowded with tables and chairs. With the exception of the dining room, the rooms were dark. There was an oppressive air here. Unlike the first place, there was a stagnant feel.

The other two houses felt more like homes. There was a warm feeling in the air. The houses were light and airy. The furniture was in good condition and comfortable. There was a balance between structure and relaxation for the women in their programs. Counselors interacted with clients, but for serious issues, women were taken into private areas for a conference. Women said they felt care and respect from staff. They felt that their programs were conducive to healing and recovery. The physical environments in these cases had a therapeutic effect for the residents and they felt that this contributed to continuation in the program.

Residential programs also had a down side. Some women reported occurrences and events that threatened their sense of trust, safety, security, sense of self, and recovery. These included (a) incidents of sexual contact between the residents and between the residents and employees of the program, (b) trusted counselors leaving their programs

after only a short period of time, (c) limited availability of one-on-
one counseling time, (d) having possessions stolen, (e) being threatened
by staff with the loss privileges and even the loss of their babies
without due process, (f) the availability of drugs right outside the
walls of the houses, and (g) stagnation, boredom, and being treated like
children. One woman said, "The mothers are treated like children" (T1,
#30, p. 19); and "You can't go to school until you've been here for six
months...which is holding people back. (It's) more time to sit back and
think about your bullshit. I have to accomplish something every day,
cause if I don't, then it's a trigger (for drug use)" (T1, #30, p. 27).

Women also reported sadness and a sense of loss after developing
trusting relationships with counselors who left the programs after only
a short time. Women reported having a difficult time trusting others and
when they finally did, the relationships were lost. "My
counselor...that's what held me here...she's no longer here. When I
needed her, she was there...she guided me. The program now, is so
scrambled up, they don't know what they're doing...I'm tired of it.
They're not organized" (T2, #29, p. 9). This woman was about to leave
the program because she felt the program could not address her specific
needs.

Some women resented the structure "I feel sometimes like this is a
prison" (T1, #30, p. 17), while others felt more structure was needed.
Some women who reported disliking the structure in the residential
programs were in the program because of a court mandate or some other
coercive method by another person. The literature supports readiness for
recovery and self-motivation as key to successful recovery and this
population seemed to support this contention.

Two of the women who were more than 20 months clean and sober
spoke of their experiences with leaving the safety of the residential

program and venturing back out into the community. These women had already completed the study, but were calling to say hello and discuss how they were doing in their recoveries.

> Woman 1: I still have a lot to learn about my recovery. I am very careful about who I let into my home and in fact, for the longest time just kept myself locked up in my apartment because I was worried I'd relapse again (#1).

> Woman 5: I like being in this new environment. It's like a 'Leave it to Beaver' neighborhood. It's peaceful and quiet. The neighbors are quiet and help each other out. I don't even know where to look for drugs even if I had the desire...I'm very selective and particular about who's being let into my home or my life" (#5).

One woman who was about to graduate from a residential program had 18 months of sobriety and was being reunited with her children. She relapsed and left the program three weeks before graduation. She had a previous history of leaving residential recovery programs after having long periods of abstinence. Staff felt that she repeated this pattern because of her fears of returning to an unprotected, unstructured environment outside of the safety of the program. This particular woman also had a long history of auditory hallucinations that she said were telling her to harm or kill herself. These hallucinations were managed with medication.

<center>Time</center>

The element of time was an important concept in the interview data. All of the women mentioned the importance of time and timing when they described their lives.

Chronology and timing of events. Women described a "chronology of events" and "timing of events" from childhood through adulthood. The chronology of events was the linear sequencing in time as viewed

retrospectively. The timing of events was related to specific episodes that occurred where choices and actions depended on their situations at the time. For example, a fight with a boyfriend, a change in mood, being in a recovery program affected the decision to use or not use substances. Events were related to other events that occurred "before" or consequences that occurred "after". Women often made the link between past experiences of abuse, violence, dysfunctional family interactions, personal resources and demands, substance abuse, and their current life situation.

Time as a commodity. Time was described in terms of commodity. Time was valued and they described their lives in terms of how well they were able to use this commodity. Categories included, losing time, wasting time, not having enough time or quality of time.

Women reported a sense of "losing time" while on drugs, for example, smoking crack was related to losing days or even years. For example, Woman 6 said, "I lost a lot of years (past). I was a hurt little girl growing up, doing my mother's job (past). I don't even feel like I'm 35 now (present). I feel like I'm 25. All I want to do now is stay off of drugs (implicit wish for a future without drugs)" (T1, #6, p. 10).

Women also reported "wasting time". For example, one woman lamented about wasting time while residing at the residential program "just sitting around feeling like nothing's getting accomplished" (T1, #30, p. 27). She was residing at one of the programs where there was minimal group therapy and individual counseling and she was still in her first month of the program where she was obliged to stay in the house all day. She said, "(You have to) make your time useful...I have to accomplish something every day. Every day that I stay clean, then I'm accomplishing something while I'm pregnant. But after I have the baby, I

need something to fall back on, because I'm not going to have that anymore. I need to have something" (T1, #30, p. 27). She expressed an interest in completing her GED and pursuing her art while she was in the program and said that "if clients aren't allowed to go out for their educations, then bring the classes to the program".

Other women reported a sense of not having "enough time" to do the things they want to do. For example, one woman said, "I'll go to Blockbuster (for a video), but I usually don't have enough time because even during the videos, the children always need something. I don't really have a whole lot of time to do things that I like to do" (T2, #22, p. 3). She later partially attributed her ability to stay clean and sober with not having enough time for getting into trouble and using drugs. In this case, not having enough time had both positive and negative elements. While she barely had enough time for herself in the day to do the things she wanted to do (i.e. exercise or watch a video), not having enough time on her hands may have contributed to her sobriety.

A related concept of not having enough "quality time" was also reported. For example, one woman said, "They are really short on staff here. With only one person to go around, I'm not a priority. I'm lucky to get 20 minutes of time. But it's really important because quitting drugs is not the only thing I have to change. I have to change my life. It can't just be about quitting drugs, but about working through the issues so you can have a new life" (T1, #30, p. 13). Therefore it seems that the quality of the interactions and the quality of time is important to the women in recovery.

In summary, the social environment, within the context of health, personal resources and demands, and time is a complex construct. This study provided some interesting findings.

Health

Within the health dimension, women were at risk for STDs, unintended pregnancies, and exposures to violence in their lives. Women entered prenatal care early in pregnancy and attended regularly. They looked forward to attending prenatal visits with providers who were knowledgeable, professional, non-judging, and caring. Approximately 8% of the women had stillborns, 36% of the infants had complications at birth, and 18.5% of the births were by Cesarean Section. The majority of women were poor, in residential treatment during pregnancy, and not with a partner. Women's substance use for all substances, except tobacco, decreased from pre-pregnancy through postpartum. The study population consisted of predominately African American women.

Personal Resources and Demands

Self-esteem and depression scores improved by the postpartum interview. Interview data suggested that their perceptions of themselves either in positive or negative terms influenced how they felt about themselves, their substance abuse and recovery efforts and the course of their lives. Two women reported psychotic episodes.

Social Environment

The network had stability in the number of members that were present from pregnancy through postpartum, but the dynamic nature of the network became apparent over time as members entered and exited the network. Eighteen percent of the network was identified with substance abuse histories at Time 1 and Time 2 with the majority being partners and family members at Time 1 (83%) and at Time 2 (70%). There was a trend toward eliminating substance using partners and family from the network at Time 2 and replacing them with recovering friends.

Family was an important source of support for women, especially during the postpartum period. Siblings and friends seemed especially

important using the NSSQ data; and partners, female family members, and children were mentioned frequently during interviews. The total amount of support seemed more important than the average support received. Being liked, loved, respected and admired were important to the women. Women felt that their networks were more able to provide help while confined to bed than if they needed money or a ride. Issues around memories of childhood interactions with family were often conflicted ranging from loving and supportive to violent and abusive. Sometimes one individual network member were discussed in terms of both ends of the spectrum. "God" and the physical environment were important elements of the social environment.

Time

Finally, time was an important element. There were changes in health, personal resources and demands, and the social environment over time. Time was also a concept identified in the interview data as women discussed (a) the chronology and timing of events in their lives and (b) time as a commodity.

CHAPTER V: DISCUSSION

The following discussion will address the findings in terms of the sample, health, personal resources and demands, the social environment and time. A proposed modification to the Kahn and Antonucci model (1980) will be presented.

The Sample

The sample was under represented by White (10%) and Latina (17%) and over represented by African American women (60%) and other or mixed race women (10%) as calculated by the estimated pools of possible participants. It was expected that approximately 35% of White women, 43% of Black women and 23% of Latina women fitting this criteria were available in the pool of possible participants. The actual mix of recruited participants was 14% White, 59% African-American, 14% Latina, and 11% other or mixed race women.

There were some possible explanations for this. First, there was evidence that during the period of data collection crack cocaine may have been the drug of choice for African American women when compared to White and Hispanic women (Chasnoff, et al., 1990; Vega, et al., 1993). Second, African American women in this particular urban setting seemed more likely to utilize the public residential treatment services. Third, public outpatient obstetric programs and public residential treatment services that provided care for poor women were used for recruitment purposes.

Clinics and private medical offices were not accessed partially because of the contention by these facilities that there was not a "crack problem" there and maybe partially to protect these clients from the stigma associated with admitted crack use. Murphy and Rosenbaum (1997) presented a case study comparing a young, poor African American

woman who had a crack habit with a young, middle class White woman who was addicted to cocaine which she snorted. Although the White woman started using drugs at an earlier age and at a heavier volume, she had resources available to her that cushioned her from the impact of her addiction (i.e. homelessness, prostitution, poverty). Murphy and Rosenbaum stated, "Although virtually anyone from any background can get into trouble with drugs, individuals who possess life options or have a stake in conventional life tend to have a greater capacity for controlling their drug use or for getting out of trouble if they don't" (p. 109). There was also the underlying implication that privileged women were better able to hide their addictions and not suffer the same intensity of consequences because of the resources available to them. They were also more likely to have more options for treatment services should they have decided to use them.

Argeriou & Daley (1997) compared racial differences within a sample of Hispanic (n=104), White (n=213), and African American (n=210) pregnant substance abusers in treatment. They found significant intergroup differences in the types of substances used with White women and Hispanic women choosing primarily heroin and African American women choosing crack. White women were also more likely to abuse prescription drugs than Hispanic or African American women.

Argeriou & Daley (1997) found other differences including that White women were more likely to (a) engage in illegal activities, (b) be married, (c) be employed, and (d) have started experimenting with and using drugs earlier in life. African American women were less likely to suffer from psychiatric impairment including suicidality and less likely to have been sexually assaulted than White women. Finally, although African American women were less likely to be involved with illegal activities, they represented a disproportionately higher involvement

with the criminal justice system. Whites reported (a) more serious conflicts with parents, siblings, and boyfriends and (b) more close friends than African American or Hispanic women who reported spending more time with family than White women. Hispanic women were more likely to have less education and have more pregnancies and children than White or African American women.

The small sample from this study precluded the ability to determine racial differences as presented by Argeriou & Daley, however, there were some notable differences in findings between studies for African American and Latina women. Some African American women in this study did suffer psychiatric impairment. In fact, the two women who described auditory hallucinations were African American. There also seemed to be a proportionately higher rate of earlier alcohol use for Latina women and earlier marijuana use for African American women. Also sexual assault and other acts of violence were reported throughout the interviews with the women.

There was also a difference between the women who agreed to participate in the study and women who did not participate. Women who did not participate were not actively engaged in any type of recovery program. The "not in treatment" group was difficult to recruit even with food vouchers, cash stipends, and assurances of confidentiality. The final sample represented a mostly treatment oriented population. Women who engage in treatment services may have more positive health outcomes than their non-treatment counterparts (California Dept. of Alcohol & Drug Programs, 1994; Vega, et al., 1993). Therefore, this population may represent the best case scenario for crack use and pregnancy.

This study provided some evidence that differences in choice of substance can affect the racial composition in drug studies, especially if only one substance is identified for study recruitment. There was

also evidence of discriminatory treatment of women who used substances,

but women who reported these occurrences felt that discrimination was

based on substance use rather than race. However, as Argeriou & Daley

(1997) pointed out, African American women were less likely than White

women to engage in criminal activity but were more likely to pay the

consequences in the judicial system. Institutional racism permeated

private sector facilities that were approached for permission to recruit

participants with the indication being that there was no drug problem at

those sites which provided care to predominantly White populations.

Reinarman and Levine's (1997) book entitled "Crack in America.

Demon Drugs and Social Justice" discussed the important roles of the

news media and politicians in establishing the "crack scare". While

national data supported a decline in the number of cocaine and crack

users in the late 1980's, media and politicians misrepresented or

ignored the evidence and instead provided propaganda for the drug war.

Supporting a "drug war" was useful for both political parties and

provided a scapegoat for the increase in urban poverty. The Partnership

for a Drug-Free America was formed to push an anti-drug campaign in

young people and took credit for the decline in drug use, when in fact,

the use of cocaine was already on the decline. Partnership ads

notoriously avoided mention of the two most prevalent forms of drug use

among youth, tobacco and alcohol, and media continued to make millions

of dollars in advertising each year from tobacco and alcohol companies.

While money continued to pour into these propaganda ads, the root causes

for urban problems (e.g. joblessness, homelessness, poverty, lack of

educational opportunities, etc.) were not addressed in any meaningful

way.

Reinarman, Waldorf, Murphy, and Levine (1997) found that the

majority of cocaine smokers in their population were functional middle

class, employed adults who had conventional lives and attachments. They pointed out that most of the work with crack users has been with prisoners and treatment program participants who represented the most troubled users. The participants in their study were able to maintain a level of appropriate functioning in their lives in spite of binge use and problems such as financial decline, self-absorption, and physical complaints. Reinarman and colleagues pointed out that heavy binge use did not necessarily imply addiction.

Bourgois (1997) discussed the crack culture in terms of people in poverty searching for access to the "American Dream" in one of the only ways accessible to them. The crime business offers opportunities for material gains in settings where economic possibilities are limited. And finally, in New York City, most drug related crimes were not related to crazed users victimizing unsuspecting innocent bystanders, but rather were related to the cut-throat tactics needed to run an illicit business (Goldstein, Brownstein, Ryan, & Bellucci, 1997). For a further discussion of these larger social issues, the reader is referred to the book, "Crack in America" (1997).

Health Status

Substance Use

Substance use was a key variable in this study. The majority of women were polysubstance users and had started using at early ages. Twenty three of the women started using alcohol before they were 18 years old, 11 before the age of 13, with the youngest user starting at age four. The younger starters usually listed parents, siblings, and other relatives as having introduced them to using. The first substances used were alcohol, tobacco, and marijuana. These three substances have been viewed as gateway drugs to the use of harder substances later in life. Older starters often listed friends and partners as the

individuals who introduced them to drugs. This confirmed the work by Hawkins and colleagues (1992) who discussed the risk of family addiction in the development of childhood substance abuse and later initiation and use of other substances a result of partner and friend involvement.

When women use multiple substances, as did this population, it is difficult to separate specific health outcomes for individual substances. The use of multiple substances and/or the interaction of multiple substances with each other may cause different types of health consequences than one substance alone. The most abused substance, alcohol, has been identified as a teratogen. It is possible that the combination of alcohol and tobacco would result in far worse outcomes for fetuses and newborns than cocaine alone.

Many of the women were aware that their drug use could hurt the baby and were making efforts to decrease consumption. There was a continuing trend among women to decrease substance use from high pre-pregnant levels to lower pregnancy and postpartum levels. The exception to this was tobacco. Women found it difficult to eliminate this substance and rationalized it by saying it was more important to refrain from the illegal substances before moving to the legal ones. There was awareness that alcohol and tobacco were harmful. However, there was also a rationalization that these were not as *bad* or harmful as the illegal substances, thus perpetuating one of the greatest myths in the United States which is the assumption that legal substances are less harmful than illegal ones. This myth continues to be perpetuated by alcohol ads in the public media which portray beautiful women and male camaraderie at fun social events.

On a social and political level, the conception that alcohol and tobacco are less harmful bears some truth especially for women of color. For example, Cornellia Whitner, an African American woman in South

Carolina was charged with "endangering the life of her child in utero" after using crack cocaine. She was sentenced to eight years in prison. The state supreme court later upheld the decision in spite of arguments from experts in addiction treatment and in medicine that described why treatment was a better option than incarceration (Whitner v. State of South Carolina, 1996). This decision provided blatant evidence that poor women, and especially poor women of color suffer the consequences of their addiction more profoundly than White women or men. It seems highly unlikely that these same judges would have upheld the ruling had their wives, daughters, or sisters been in the same position with exposure of their fetuses to alcohol, tobacco, or prescription medication, even with evidence that alcohol is a teratogen.

Rubenstein and Samuels (1997) argued that many recipients of welfare were addicted yet many states reduced funds for treatment services and only nine states planned to increase funding for drug and alcohol treatment. The federal welfare law from 1996 mandated moving women from welfare to work, yet at the same time prohibited providing benefits to anyone convicted of a drug felony even if that conviction was only a possession charge. States have the option to continue benefits, but 20 states were planning to deny benefits in accordance with federal mandates. This means that women who are in the most need for treatment are further restricted by lack of funds or benefits to have access, even if or when appropriate programs are available. It is small wonder that women in this study viewed alcohol and tobacco as "less harmful". It seems that one recovery strategy was to eliminate the illegal substances first and address the legal substances at a later time in recovery.

Infant Outcomes

Women in this study decreased crack use during pregnancy, enrolled in prenatal care, most were in an addiction treatment programs and they generally had positive infant outcomes. However, 11 women had infants with complications which ranged from milder problems (n = 4) which included tachycardia, meconium without aspiration, and a cheek laceration) to more serious problems (n = 7) which included sepsis, IUGR, prematurity, and fetal death. These complication rates were generally comparable to the overall rates from the available San Francisco data. Decreased substance use during pregnancy was related to the woman's desire for a healthy baby and her desire to be able to keep her child at home with her which confirmed the work of Kearney and associates (1992 & 1994). Women who were in treatment entered prenatal care early in their pregnancies and received regular prenatal care. There was a moderate inverse relationship between the number of prenatal visits that women attended and infant complications indicating the importance of keeping women in prenatal care even when they are using substances.

French and Martin (1996) conducted an economic cost analysis to determine the fiscal expense involved with substance abuse. Parameters included: medical and perinatal service costs, drug treatment costs, drug associated diseases and co-morbidity costs, crime-related costs, welfare and children's services costs. They estimated cost differences in all areas including an approximate four-fold cost increase to provide newborn hospital care to polysubstance exposed newborns ($10,465) compared to non-exposed newborns ($2,734). Therefore, even with some early newborn complications, live born babies in this study were (a) the recipients of early and continuous prenatal care, (b) had a median APGAR score of 9, and (c) were generally not low birth weight. It can be

assumed that prenatal care and substance abuse treatment may have

contributed to these outcomes. But other contributing factors may have

included good nutrition, safe housing, and adequate sleep.

High-risk Sexual Practices

Substance abuse was related to high risk sexual behaviors with an

associated risk for sexually transmitted infections. This also supports

the high risk nature of this population for acquiring HIV infection and

supports the work of Carlson & Siegal (1991) and Lindsay and colleagues

(1991). Unsafe sex practices and the lack of other contraceptive use at

Time 1 also confirmed the risk of pregnancy for this population.

Approximately a third of the women chose sterilization as their

contraceptive method after the delivery. This may have been a reflection

of the multiparity and advanced age of some of the participants.

Violence

The high percentages of women who had survived child abuse,

domestic violence, sexual assault, and other violence, confirmed other

reports (Amaro, et al., 1990; Hawkins, et al., 1992; Kronstadt, 1989).

The combination of early trauma and early introduction of substances by

family members appeared to be a precursor for serious psychological and

health consequences later in life for some of the women in this study.

These factors have implications for the multigenerational nature of

addiction and the need for supportive family services early in the lives

of children as evidenced by the narrative data in this study and by

others (Fawzy, et al., 1983).

Resources and Demands

Depression and Well-being and Self-esteem

In contrast with the White middle class women described in the

earlier transition to motherhood studies of the 60's, 70's, and 80's,

depressive symptoms were higher during pregnancy but decreased after the

baby was born for this sample. However, more than a third of the women in this study were still depressed at the time of the three to five month postpartum interview. According to Mercer's (1995) review of the postpartum depression literature, as many as 80% of women experience postpartum blues in the first week after birth. But by six to twelve weeks postpartum, one-fifth or less of new mothers experienced depression. The women in this study seemed more depressed during new motherhood than the women studied in the transition to motherhood literature, despite the statistically significant improvement in depression from pregnancy. These levels of depression and self esteem were comparable to levels found in women with severe premenstrual syndrome (Taylor, 1998).

There were several possible reasons why the women in this study may have been less depressed after their babies were born. These included substance use withdrawal, underlying psychopathology, an improved sense of self surrounding the early motherhood experience, and the knowledge that their babies were healthy.

As women eliminate substances from their systems, a rebound depression can last several weeks to months. Brown and Schuckit (1988) identified this phenomenon with male alcoholics when they found a significant reduction in depression one month after abstinence from alcohol. In 1993, Avants and colleagues (1993) reported the same results for cocaine abstainers. Women in recovery had only been abstinent a short time at the time of the first interview and may have been experiencing an abstinence syndrome.

As women eliminated stimulant use, underlying psychopathology may have surfaced. Dual diagnosis and even triple diagnoses have been identified in more than a third of substance abusers (Bakti, 1990). There was evidence that some women exhibited psychiatric illness prior

to using drugs, for example, two of the women who had auditory hallucinations remembered their first episodes during childhood prior to their substance use. However, there was also the possibility that psychiatric sequelae began after or was worsened by substance abuse as in the case of the woman who had increasing episodes of "blacking out" as her addiction worsened.

There was also strong evidence supporting the existence of posttraumatic stress disorder (PTSD) by some of the women who survived major childhood and adult trauma (e.g. rape, assault, and near death experiences). Breslau and colleagues (1997) studied 801 mothers and found a lifetime prevalence of traumatic events of 40% and (PTSD) of 13.8%. Posttraumatic stress disorder influenced the risk for first-onset major depression and alcohol use disorder. The use of substances to dull the symptoms of depression and anxiety related to PTSD may increase a woman's vulnerability to further trauma events (e. g. rape and assaults), thus perpetuating the cycle.

Gil-Rivas, Fiorentine, and Anglin (1996) conducted a prospective, longitudinal study of 182 women and 148 men in outpatient drug treatment programs. They found that the women were significantly more likely to experience sexual and physical abuse and develop PTSD symptomatology. There was also a higher occurrence of low self-esteem, depression, anxiety, and suicidality for women than for men, but even with more symptomatology, women were no more likely than men to relapse because they were more likely to engage in the treatment process. Treatment mitigated relapse.

Women may have had improved self-esteem and a sense of well-being and less depression because they were successful in delivering healthy babies and were demonstrating that they could be good mothers. Their sense of identity and self-esteem may have been directly related to

their ability to have healthy babies who thrive. This would support the work of Kearney and colleagues (1994) who found that children were powerful motivators for recovery for women. Camp and Finkelstein (1997) described the effects of parenting training for women in residential treatment. They found that as parenting skills improved, self-esteem and the quality of the mother-child interactions improved. Since the majority of the sample in this study were engaged in some type of treatment services, it was likely that parenting classes were part of the program, thus enhancing self-esteem.

Finally, just because women were less depressed at Time 2 did not necessarily mean that they had less postpartum depression, overall, than the White middle class women in the transition to motherhood studies. Twelve women (41.4%) were seriously depressed at Time 1, six (22.2%) at Time 2. Serious depression for this instrument implied suicidal thoughts, ideation, and risk. Although this was a 50% reduction in serious depression at Time 2, these women may still have been generally more depressed than a non-drug using predominantly White middle class population of new mothers.

Generally, the existence of depression, low self-esteem, and histories of child abuse, domestic violence, sexual assault, and other violence in this population supported the data in the literature (Amaro, et al., 1990; Bresnahan, et al., 1992; Degen, et al., 1993; Zuckerman, et al., 1989). While, it was unexpected that there would have been improvement in depression from pregnancy to postpartum, more than a third of the women continued to report depression and low self-esteem after their babies were born with more than a fifth being suicidal. Retrospectively, substance withdrawal, psychopathology, and an improved sense of self through successful early mothering experiences help to

explain why this might have occurred and indicates areas for therapeutic intervention.

Social Environment

Social environment as a key concept in the addiction and recovery process was an important concept in both the instrumented and interview data. Various facets of this environment included physical, economic, personal network, and supportive aspects of relationships. The success of recovery and relapse prevention programs at least partly depended on preparing women to deal with relationships and the environmental triggers in their lives and to build healthy relationships and safe environments for their own recovery.

Network

The term "social network" describes the structure of social relationships while "social support" describes the specific functions of a network (Laireiter & Baumann, 1992). This study identified a paradox in the stability and the dynamics of the network. If only the number of network members were evaluated at Time 1 and Time 2, it would appear that the network was stable. The number of network members remained approximately the same. However, after calculating which past members were eliminated from the network at Time 2 and which new members were added, an image of a dynamic structure was established. Network members would come and go depending on the timing of the evaluation. For example, women seemed to decrease the number of active substance users in their network after their births and having spent some time in recovery.

A paradox existed when the personal network contributed both to the addiction and recovery process. If partners used and were dealing drugs, the accessibility made it easier for the women to use. This concept was supported in the literature. Women described knowing that it

was important to leave unhealthy relationships in order to improve their recovery outcomes, but as one woman stated, "You know the tools, but you don't have the strength to use it...I would still rather get the little bit of love that I get rather than none at all."

Family members disappeared and friends increased reflecting a shift in network composition. Although friends were also more likely to be identified as substance users at Time 2, it may have reflected that women were in residential treatment programs with other women in recovery who were supportive of them. So while network numbers remained relatively stable, the network was dynamic depending on the timing of life events (e. g. birth, recovery, addiction, and relapse).

<u>Non-corporal Entities in the Network: A Spiritual Connection</u>

In 1937, with the advent of Alcoholics Anonymous (AA), there was a shift in theoretical paradigms from a moral weakness model to a disease process model (Marlatt & Gordon, 1985). The 12-step approach to recovery incorporated a spiritual component by including a "higher power" in the process. Peteet (1993) proposed that the spirituality within the context of a 12-step program referred to aspirations or values and transcendent or immaterial realities. He also proposed that this spirituality examined identity, integrity, inner life and interdependence.

While this seemed true for some of the women in this study, many women reported God and the Devil as active participants in their lives, much the same as they described active involvement by other network members. Spirituality was viewed within the context of (a) church or religion, (b) a sense of a more empowered, capable, and loving self, and (c) spirit network members who directly influenced lives. The influence of the "higher spirits" as actual personalities was powerful and meaningful to these women. Until recently, it seemed that there was a reluctance in the scientific literature to address the importance of

this spiritual connection. But there was also an impression of a deeper spiritual connection to themselves as they searched for answers and meaning in their lives. Some women joined church and prayer groups, while others reflected through meditative practices and journal writing. These were valid methods for recovery that the women used in their day to day lives and can not be dismissed simply because "science" doesn't have a quantified measure for it yet. The "spirit" connection begs for further inquiry and has been investigated and incorporated into nursing care as an important aspect of health and healing (Steiger & Lipson, 1985).

Tangible Aid

Having a perception that tangible support was not available may have been a reflection of the socioeconomic status of the women. Women who were economically disadvantaged were likely to have network members who were also economically disadvantaged. Lending money or driving a car may have been less possible for women in lower socioeconomic groups who had limited financial or transportation resources. The relationship between receiving tangible support and being in treatment at Time 1 may have reflected the need for assistance with finances, child care and continuing the day to day business at home while the woman took time to enter a residential treatment program.

Emotional Support

Emotional support was viewed more positively after the babies were born than during pregnancy. But women were also less depressed and had more self-esteem at Time 2 than at Time 1 and were possibly better able to appreciate the support they received. This may also support the contention that support may not have been viewed as support when it was given but retrospectively when personal resources and health status improved.

Emotional support paradoxes were more difficult to explain. The two women who described their mothers opposite to how they were scored on the NSSQ (one positively and one negatively), both said that they loved their mothers. Yet how they viewed the support they received was contrary to what observers might have viewed as present or missing support.

One woman received housing, child care, food, and transportation assistance by her mother and did not include her mother on the NSSQ at Time 2. The other woman had a mother who exposed her to multiple traumas, yet listed her mother as one of the two support people in her life. This suggested that the "perception of support" or possibly "idealized support" may have been the operational dimension rather than reported behaviors as observed by either the woman or an outside researcher. Other possible explanations included that (a) support scores were given based on the fantasy of what the network member could or should provide rather than the reality of what they did provide, (b) the support for the woman with the addicted mother represented the best and only kind of support she knew, (c) loving and caring for someone slanted the perceptions of received support, (d) being accepted and loved by someone who shared and possibly encouraged the addiction was support, even if it had health damaging consequences, and (e) at a different time in the life cycle, this reality could change.

Harris (1992) described possible mechanisms that inhibited supportive transactions. These mechanisms fell into two categories; network member initiated and subject initiated. Network member initiated transactions that inhibited support included (a) the support giver's divided loyalties between the subject and another member of the network, (b) critical or hard-hearted support figures, (c) support figures protecting her/himself to avoid potentially unpleasant consequences of

giving crisis support, (d) support figure not regularly present or geographically too distant to provide adequate support, and (e) support figure giving well-intentioned but inappropriate support. Woman initiated transactions that inhibited support included (a) protecting support figures by not confiding, (b) protecting herself by not confiding, and (c) her appraisal of the stressor was so low-key that she felt no need to confide in anyone.

In the case of the first woman, her mother, while providing the basics to keep her from homelessness, also provided a sharp tongue and a verbal lashing of the woman's current condition of homelessness. There was a price to pay for being dependent and living under her mother's roof. In using Harris' (1992) examples, this woman's case possibly exhibited the network member initiated mechanisms of a critical and hard-hearted support figure who gave some inappropriate, though well-intentioned support. She also may have been demonstrating the subject initiated mechanisms of protecting herself and viewing her stressor as so low-key that she didn't feel the same need to confide as she did in Time 1 when her mother was listed as her only support person.

Women were also aware of the need to make amends to others in the network who had been hurt by their addictive behaviors. For example, one woman described how she "stole her mother's nest egg for her drug use and left her mother broke", yet her mother still loved her and accepted her. Once she was in recovery and had achieved some sobriety, she expressed feelings of guilt and remorse. Other women described similar interactions, yet their network members were not as forgiving and more skeptical of long term recovery.

Negative Aspects of Involvement in a Social Network

Orona's 1990 article on temporality and identity loss due to Alzheimer's Disease proceeded from the assumption that the social

construction of one's identity is a life long process that is formed, maintained, and altered in daily social interactions. Identity loss of the drug abuser may fit the assumptions posed by Orona. As drug addiction takes over, the person who was known and loved becomes someone else who is not liked or may even be feared.

Social support requires interaction at some level and it would be difficult if not impossible to maintain supportive relationships in an interaction where trust is betrayed (e.g. through theft, abandonment, violence) and individuals change their identities. It seemed a paradox that dysfunctional family members who had been abusive or addicted were viewed as supportive by the women participants. It also seemed a paradox that the actions of some of the identified support people encouraged a drug using lifestyle. This indicated that there was support for continuing a substance using lifestyle that was valued by the women during some points in their lives.

Women also described the stress associated with feeling obligated to return favors or be available to network members. Network members who expected payback for the assistance they provided, were not viewed as supportive as network members who provided support with "no strings attached".

<div align="center">Functional Support</div>

The majority of the functional support was provided by the family and partner at Time 1 and Time 2. Approximately one-third of the functional support was provided by mothers, daughters and sisters at Time 1, and approximately one-fifth at Time 2. Partners provided less than 10% of the functional support at Time 1 and Time 2. Interview data described the quality of these relationships with important female family members. Paradoxes existed when describing these often volatile relationships, for example, the woman who described her older sister who

was like a mother to her and who she loved more than her mother changed when she began to use crack and became "scowless". This change in an important relationship brought sadness and tears to the eyes of this woman as she relayed the story. She listed her sister on the NSSQ as a support person, yet this relationship was filled with conflict and grief around substance abuse.

As seen in the data, there also seemed to be an issue with role reversal between mothers and their children. Women listed children as support people on the NSSQ, yet the majority of these children were young and in need of adult love and support themselves. One of the children was a six year old girl with Down's Syndrome. Another child had survived sexual molestation, watched her mother almost die from knife wounds, and was pregnant at the age of 16 at the time of the interview. The mother, who was in a residential recovery program, felt a great sense of guilt and shame regarding the way she mothered (or didn't mother) her daughter. Through her recovery program, she was able to start considering her daughter's needs as her mother, and not as a needy child herself. She was able to start the healing process through counseling for herself and also with her children.

The interview data demonstrated the complexity of relationships for the women in this study. The forced choice questions of the NSSQ were unable to completely address the complexity of these relationships. Conflicting and paradoxical relationships provided support, but also stress and pain.

Rook (1992) discussed the detrimental aspects of social relationships. She urged a balanced perspective on the dual aspects of social relationships. She proposed that problematic exchanges could cause psychological distress and inadvertent or overt actions could undermine and adversely affect health. Tipping the balance between these

concepts may determine whether or not health damaging or health promoting behaviors occur. For example, stress and pain in relationships may increase the risk for substance use.

Personal resources and demands, such as depression and low self-esteem may provide the screen or filter through which women view their social relationships or engage in social interactions. Whether or not the individual perceives interactions as supportive and beneficial or stressful and detrimental are at least partially viewed through this screen. Harris (1992) also added hopefulness as a mediator in how support is perceived. This may explain why there was a positive relationship between being in treatment at Time 1 and the perception of good support at Time 2. This finding may have been a reflection of women being less depressed and more hopeful, of having a better sense of self-esteem, and of having the benefit of counseling and recovery to reflect on the positive aspects of the support network.

The complexity of relationships for women supports the work of Jean Baker Miller (1986) who proposed the feminist theory of "self in relationship". She described women's strengths which included having emotional commitment and participating in the development of others, working in a cooperative system that addresses each individual's needs, and developing a personal creativity to help overcome obstacles to satisfying relationships. She also proposed that women believe that any activity is more satisfying when it takes place in the context of relationships and even more so when it leads to the enhancement of others and that satisfying relationships were directly related to a woman's self-esteem and states of well-being. These are qualities that have not been traditionally valued by the dominant male society.

Interview data from this study suggested that while women were engaging in an episode of crack use, this relational identity was at

least temporarily put aside. Being out of touch with themselves within their relationships may have contributed to their depression and low self-esteem.

Health care providers received low scores for functional support during pregnancy and showed improvement at three to five months postpartum. This may partly have been a result of women being very early in their care at Time 1 with only one or two visits to their provider. At Time 2, the women had developed a relationship with their provider that was usually described in positive terms. Also women were less depressed and had improved self-esteem at postpartum which may have had an impact on their perception of support.

<div align="center">The Physical Environment</div>

The physical environment can not be ignored when addressing issues of network, support, addiction, and recovery. Paradoxes existed even in the recovery programs. While these programs were viewed as safe havens for healing, many women also reported difficult interactions with staff, safety threats, and close proximity to community drug users.

While some women completed the full residential treatment program, the women who had left treatment by the postpartum interview did so because they had completed their legal requirement, they relapsed, they felt they could manage their recoveries either with or without outpatient services, and they were dissatisfied with their program. Reasons for being dissatisfied included:

(1) The program was either too structured or not structured enough. Carroll (1997) stated that while there was little consistency across studies and treatment settings in terms of characteristics of those who drop out of treatment, there was consistency across studies suggesting that most attrition occurs early in treatment. She asserted that "one-size-fits-all" models of treatment are not conducive to retention in

treatment and that retention reflects a "good fit". A combination of stability and flexibility was recommended.

(2) There was a high turn-over rate for counselors. There were several reasons, including, (a) burn-out, (b) being fired for advocating for the women against program policy, (c) low salaries, and (d) personal reasons which included counselor relapse. Women felt sad and betrayed when they would finally establish enough trust with a counselor to begin the serious work of recovery only to have the counselor quit or be fired. Liese & Beck (1997) stated that the most important strategy for reducing dropout is to develop and maintain genuine, warm, caring, empathetic relationships with clients. The development of these relationships takes time and the establishment of trust. When counselors leave too soon in the process, there is the possibility for creating pain and harm to the client. This can manifest itself as early withdrawal from the program and/or relapse.

(3) Some women felt that they were not treated like adults or respected, but rather like naughty children who were being punished for every little thing.

(4) Some women were turned off by group meetings where one woman would become the target for harsh verbal attacks and name calling while she sat in a "hot seat". There was one incident during data collection where a pregnant woman with a psychiatric disorder was in the "hot seat" at two o'clock in the morning. Her primary care provider called the program to report that the client had experienced serious psychiatric sequelae after participating in the "hot seat" activity. This woman left the program, relapsed, stopped her prenatal care, and subsequently lost custody of her child. The obstetrical and psychiatric team at the managing hospital advised the program of the consequences for this type of group interaction with a dually diagnosed client. The program

management stood firmly by their commitment to these "therapeutic

community sessions" and were resistant to investigating the situation.

These "hot seat" sessions had the potential for triggering PTSD or

psychotic responses, yet the "routine" for the group as a whole seemed

more important than addressing the issues of appropriate individualized

woman centered addiction treatment. There has been a collection of work

addressing the inappropriateness of male-oriented treatment models for

female populations yet these models still exist (Berenson, 1991; Davis,

1990; Finkelstein, 1993; Reed, 1987; Roth, 1991). There is also a

growing body of work addressing the importance of individualizing

treatment plans for addicts in order to optimize recovery courses (NIDA,

1997). This includes matching client needs with appropriate social,

psychological, health and addiction recovery services that would

maximize long term sobriety. For example, it would be difficult for

women with young children to enter treatment without a childcare

component included. All of the residential programs in this study

provided the childcare component for the women in treatment.

5) There were also safety, security, and basic needs issues. One woman

left because there was not enough food in the house. Another left

because all of her new baby things and some personal items had been

stolen while she was at the hospital delivering her baby. These issues

were also related to the women's trust issues. If women did not feel

that their basic needs for food and safety were being met, it was

difficult for them to trust that the program could provide them with

adequate counseling and supportive recovery services.

Higgins and Budney (1997) said that if attrition occured early in

treatment, then treatment was less likely to be effective for long term

abstinence. The National Institute on Drug Abuse (NIDA) outlined

strategies for retention that encompassed program, client and therapist

factors. These included (a) reducing difficulty of treatment entry and providing rapid entry to treatment once it was sought, (b) building a balance of flexibility and stability into the program, (c) matching program and therapist with client, (d) involving significant others, (e) retaining therapists in the program, (f) frequent monitoring and contact, (g) user friendliness, and (h) outreach, case management, and after care (Carroll, 1997; Higgins & Budney, 1997).

The environment is critical to treatment outcomes both in a structural and a relational context. Nursing theorists as early as Florence Nightingale have focused on the environment as a key factor in the health of individuals (Andrews & Roy, 1986; Chin & Jacobs, 1983; Rogers, 1983; Steiger & Lipson, 1985). Theory and recommendations from experts in addiction medicine have offered guidelines for treatment programs, however, the interviews from the women in this study demonstrated that there was still a discrepancy between the ideal and the reality especially in the areas of woman focused treatment, flexibility within the structure, safety, mutual respect, and trust. Until these issues are remedied, there will be no further improvement in treatment outcomes. Evaluation research should be incorporated as an important component of any treatment program so that effective programs can continue to receive funding and new programs can be developed that are evidence based.

<div align="center">Economics</div>

Economics included the influence of money and poverty in addiction and recovery. Many of the women in this particular study sold drugs, prostituted themselves, and participated in other misdemeanor activities in order to make money. Options were limited for those women who had not finished high school. Job opportunities were also limited in economically impoverished neighborhoods. Legitimate job opportunities

were also difficult for women who had childcare concerns. Seguin and

collegues (1995) found that housing density (high numbers of persons

living in a small space) and a lack of money for basic needs were the

most strongly associated with depression than other factors including

presence of a partner and substance use. Economic factors are important

in substance use, access to recovery, and treatment outcomes. Until

poverty is address, the drug culture will continue as one of the only

viable ways for urban poor youths to achieve the American Dream

(Bourgois, 1997).

Time

Finally, time is an important factor when studying phenomena that

is dynamic. To be human is to change which occurs over time. The

longitudinal nature of this study provided some insights into those

changes that occurred over time in each of the women that remained in

the study. Women spent a significant amount of time relating the

chronology of the events in their lives leading to drug use and later to

recovery efforts. Women also independently identified time as an

important commodity in their lives.

Time is also a factor within the historical framework of this

study. During 1994 through 1997, the demographics of the drug using

population at the primary clinical site was changing. Crack cocaine was

initially identified as a drug to study because of the intense media

attention and the clinical access to pregnant women who admitted using

this particular drug. By the end of the study there was a shift in the

drug of choice and the population from low-income African American women

who used crack cocaine to low and middle income White women who were

using methamphetamines and heroin. Therefore, the results of this study

must be considered within a specific historical time frame of drug use

in San Francisco and may not be completely reflective of the present
population of pregnant women and new mothers who use drugs and alcohol.

<div align="center">An Extension of Social Support Theory</div>

Beginning with the early work of Cassel (1976) and Cobb (1976),
social support has been viewed as an important variable in the study of
illness and health. These earliest theorists supported the concept of a
person-environment fit in the provision and utilization of social
support. Social support is now viewed as a complex meta-construct with
elements that include network structure, supportive behaviors, and
subjective appraisals. Kahn and Antonucci (1980) provided a model that
considered support within the network of the person. The concept of a
dynamic convoy implied that the network and support conditions could
change with time. Thus this theoretical framework provided the
conceptual groundwork for this study as a beginning place to explain the
dynamics of networks for women who use crack cocaine during pregnancy
and in early motherhood.

However, the two dimensional model of the support convoy does not
take into consideration the complexities of person, support network with
its support dimensions (affective and aid), environmental interactions,
or the spiritual connection. Also, the time element is not well
visualized with a two dimensional model. The following is a proposal for
extending the theoretical perspectives of social support, specifically
the "convoy" model of Kahn and Antonucci. In order to incorporate the
dynamic nature of social support, a three dimensional model is proposed
(see Figure 1).

<div align="center">Person</div>

In this model, the person is represented as a three dimensional
sphere that contains personal assets and deficits. This sphere is at the
center of the model. Assets and deficits can be measured as personal

resources and demands which include psychosocial characteristics, health and illness factors, personality, and the cognitive and perceptual dimensions of the individual's social and physical environment. Thoits (1994) conceptualized the individual as a psychological activist who is able to be an agent in the making a shaping of her life. These components act from within the person, and can be affected by outside influences within the network and/or the environment as well as how the individual perceives these influences.

Support Network

The support network is represented as three rings around the center sphere (person), similar to planetary rings. The rings represent the network circles in the two-dimensional model.

The individuals in the network are represented by rectangles of varying heights and widths. The black rectangles represent tangible aid, the white rectangles represent affective support, the height of the rectangles represent the amount of each type of support that is provided. Individuals in the rings can have a positive or negative charge (positive=supportive interactions appearing on the top half of the rings; negative=stressful, non-supportive interactions appearing on the bottom half of the rings). And some individuals may only provide one type of support.

Network members can appear and disappear depending on where the person is in her life. For example, at birth, the individual will have very tall center ring members, and no one on the outer ring. As an elderly person, the original members of the center ring disappear as older members die and new members appear as children and grandchildren enter the picture, each one with their own type and amount of support attached. The outer ring may be more densely populated, but also more transient than the inner ring. The appearance and disappearance of

network members with the changing types and amounts of support may be metaphorically viewed as a bubbling pot; it is both dynamic and constantly in motion. Network members may move between circles as well.

Environment

The three dimensional person/network model is situated within another three dimensional figure (pictured as a rectangle). This dimension incorporates the influences of environmental factors on the person and the network. These include but are not limited to physical, political, cultural, and economic factors.

Spiritual Connection

The whole page represents the spiritual connection. This component permeates throughout the model from within the person to a transcendence outside of the environment.

This is an interactive model which can move in any direction. For example, a person with many assets and a dense, supportive network can push boundaries of the environment outward. Or the political and economic components in the environment can become oppressive and constrict the wall, putting a squeeze on the network orbits which then reorganize. The person also affects this dynamic structure from within and can add to or delete members in an attempt to cope with environmental factors.

There is also a bidirectional interactive component between the environment, the network orbit, individuals in the network, and person. The importance of time and timing of support is integral to the model.

This model addresses the issues raised by Jacobson (1986) in his paper on types and timing of social support. He viewed the two as complementary and as an interactive process. Perception of crisis, need, and support by the person was also a key component in his discussion. In the following section, an exemplar will be presented based on the data

from one of the participants in the study in order to illustrate the model.

<u>Exemplar; Ms. D.</u>

Using a case example from the study population, the dynamic nature of the model can be further demonstrated.

1. At birth, there is a dense internal network consisting of mother, grandmother, aunts, and cousins. Ms. D.'s mother is addicted, and the other family moves to another state, so the amount of aid and affective support is decreased. The environment is influencing how her network interacts with her. She is poor, the material aid in the form of housing, food, and money is less.

2. In childhood, Ms. D. witnesses family violence. Her mother uses drugs and exchanges sex with men who beat her. These relationships are emotionally stressful for her. She is, herself, subjected to sexual abuse. She has a bond with her mother, even though she is embarrassed by her mother's actions. She loves her mother, but there is not food in the house, no electricity, no money to buy clothes. So she branches out into her second ring which includes the neighborhood drug dealers. They supply her with the material means to support herself and become a part of her network. Her dealer moves into her inner circle after they begin their sexual relationship and she becomes pregnant.

3. Ms. D. now lives in a neighborhood where she witnesses violence. Network members disappear by moving out of the neighborhood, going to jail, or being killed. The neighborhood is saturated with drug dealers. She is now the head drug dealer and leader of a gang "who would not think twice about hitting you or hurting you for your money".

4. As an adult, Ms. D. has started using the drugs she was only selling before. She relocates to another state to be with her grandmother and complete school. She is doing well for about a year until her mother

calls her and tells her she is dying of AIDS and needs her help. She loves her mother, so she returns. She reconnects with the old gang. Now she is more directly exposed to the influences of the environment which includes the criminal justice system, child protective services, and poverty. She loses her child to the "system" (environment).

5. Recovery is a long road. Ms. D. is motivated to enter a program because she is pregnant with her second child. She surrounds herself with other network members who are in recovery. She cuts the drug using people from her life, but she still loves her mother, who lied about having AIDS just to make her return home. She never regains custody of her first child. Her previous healthy family members see her recovery process and reinitiate contact. Supportive mechanisms are slowly building again. The more dense the network, the more resistance there may be to environmental forces.

This was just a short exemplar to demonstrate the dynamic qualities of this model. The story, the scene, and the players changed for the women in the study, but there were similarities in their social environments. The possibilities for explaining how support works and the links with person, network, environment, spirit, and time improves with a dynamic model. A dynamic model also offers the flexibility needed to address what works and doesn't work for women in their networks in relation to their recovery efforts. A better understanding of the social environment as it relates to addiction and recovery in women who use substances during pregnancy and motherhood is needed in order to improve treatment services. A dynamic model of support may be the key to this understanding.

Significance

This study adds to the extant literature of a particular population of women with a chronic condition and their social

environment by addressing issues of crack cocaine use in pregnant women and new mothers over time. Characterizing crack cocaine addicted pregnant and postpartum women as well as their social and physical environment is an important contribution to understanding the person-environment dimensions that can be influenced by therapeutic interventions. But more importantly, a longitudinal study that follows the life course of these women over time places their struggles within the context of their lives without the stereotypical and mythological images about crack cocaine use in women of color.

Longitudinal studies are difficult, especially when attempting to retain women who are dealing with addiction issues. This study demonstrated some successes with this endeavor with a 90% retention rate. Part of this success was (a) a result of maintaining contact with women who were still in treatment, (b) being in contact with women who continued prenatal and postpartum services, and (c) for some women, the food voucher at Time 1 and the cash at Time 2 were incentives to complete the study.

A strength of this study was also the use of multiple methods to describe the social environment of crack cocaine using pregnant women and new mothers. Sometimes instrumented data and interview data agreed, sometimes not. Also new dimensions were discovered during the course of the study that would not have been addressed with one method alone, for example, the "God" connection would not have been identified using the NSSQ. These new dimensions provide variables for future research.

<center>Limitations/Alternate Explanations</center>

While the predominance of single, low-income, mostly African American women allowed for investigation of a much stereotyped and maligned group of women, it is also a limitation of this study. Although the study by Reinarman and colleagues (1997) studied employed, middle

class cocaine smokers, most of the study population were male. Acquiring
a sample of middle class racially diverse pregnant cocaine smokers was
not possible using the accessible sampling sites. While racism may be
one possible reason for lack of access to private sites, the women in
this study did not feel that they were the victims of racial
discrimination, but rather that their drug use was the cause of
discriminatory interactions.

Another limitation of the study was the inability to distinguish
users from addicts. All women were identified as substance users.
Although, there may have been substance dependent and addicted women in
the group, they were not formally identified. A contributing factor to
this was the unavailability of some of the medical records as well as
medical records not being complete with information regarding substance
use vs. dependence. It could not even be assumed that just because a
woman was in a treatment program, she was addicted as some of the women
in treatment were sent as a condition for their probation for possession
of an illicit substance.

Another limitation of the study was that the NSSQ instrument was
skewed toward positive scores. Women were asked to list their support
people. An underlying assumption for the NSSQ is that support is
positive. Thus only the most positively supportive network are likely to
appear on the list. Stressful aspects of the support network were not
identifiable by the instrument alone. Even when one participant tried to
complete the instrument, there was no way to code that she felt that she
had no supportive person in her network. She was counted as missing data
because of the inability of the instrument to account for this
phenomenon. Also network members who were causing stress and involved
with the day to day lives of these women may not have been identified in

the NSSQ. Thus, conclusion validity was limited by problems of measurement inherent in the NSSQ.

The NSSQ was also unable to identify God as a support figure. Women described their relationships to this spiritual entity in terms of active involvement in their day to day lives.

Also, the depth and importance of interactions with health care providers was not readily obtained from the NSSQ, but rather from the interviews. Non-judgmental, caring, knowledgeable, available care providers were viewed as instrumental in the success of recovery efforts and good pregnancy outcomes. However, only three women at Time 1 and four women at Time 2 listed health care providers in the network list. It is understandable that they were not included on the list of support people because of the limited time frame for interaction, yet a positive experience with a health care provider was viewed as instrumental in the recovery process. Kearney, et al., (1994) found that motherhood provided important motivation for women to achieve and maintain sobriety. Pregnancy provides many opportunities for health care providers to have positive interactions with women at a time when they are motivated for recovery. The women in this study reflected the importance of these positive interactions and pregnancies became therapeutic opportunities.

The NSSQ also collapsed the emotional support and tangible aid into one variable called "functional support". With the exception of the relationship between the partner's support and self-esteem at Time 1, but not Time 2, the functional support scores were not correlated with depression or self-esteem. Yet emotional support and tangible aid as individual variables were inversely related to depression at Time 1 and at Time 2. Also, emotional support and self-esteem were related at Time 2. It is possible that by collapsing these scores into one support score, the value of the individual factors is lost. This problem was

also identified in the work of Brown (1992) who used 27 subscales to give a total support score for working class mothers living in London. He used a multimethod approach which included semi-structured interviewing techniques and assigning responses to the subscales. He found that some of the subscales reflecting negative features of a marital relationship were more predictive of depression than the combined general score for positive support. He also proposed that the "hard" and "soft" aspects of social research be brought together in order to study social support.

A Ridit analysis might have been a more useful analytical method for studying specific support variables (Sermeus & Delesie, 1996). Ridit analysis calculates differences using the ordinal ranking of variables. The only assumption is that categories represent contiguous intervals of an underlying, but unobservable continuous ordinal scale. No assumptions of normality or distribution pattern are made.

The NSSQ uses ordinal data to rank levels of emotional and aid support. However, the NSSQ is currently constructed to enter only the sums of the emotional scores and aid scores. These sums vary greatly depending on the number of network members that are listed. Functional support scores sum the emotional and aid scores and return the scores back to scale by dividing the total by the number of people in the network. Using this method, only group scores for network categories can be obtained, e.g. average functional support scores for mothers or partners for the total group. Individual differences in network members are lost, e.g. mother scores for each woman who reported mothers in their network. This lumping of scores may eliminate some of the dynamic individual variation of the network members.

The qualitative data were vital to explaining the discrepancies found in instrumented data and the extension of social support theory.

Instruments of social support can only provide limited information. When a population has not been thoroughly characterized, using both methods strengthened the final presentation of the data.

Implications for Practice

The implications for practice are many. They include some of the following:

1. The importance of addressing dual diagnosis and post traumatic stress disorder issues in a substance abusing population are confirmed.

2. The physical environment as an important element for the treatment of addictions and the prevention of relapse is an important consideration for practice. Any physical environment can pose hazards for recovery efforts, even within the confines of a residential treatment program.

3. Efforts must be continued to provide gender oriented treatment services which (a) match the type of service and provider with the needs of the woman, (b) consider issues of family violence and substance abuse, and (c) incorporate a spiritual approach during the recovery process for individuals who have a spiritual belief system.

4. The quality of the network and whether or not network members provide health damaging or health promoting support needs to be addressed. Also, assessments of the network should include whether or not there are active substance users in the network.

5.Providing a nurturing, non-judgmental, non-discriminatory, caring environment in the clinical setting encourages women to continue their prenatal care. Caring seems to be a key factor. The mothers need mothering themselves. Developing therapeutic alliances using methods that incorporate those qualities may be important in attracting and keeping women in recovery.

Future Research

The following are recommendations for future study:

1. Methods of measuring social support within the context of the network, the environment, and personal factors need to be refined. The NSSQ, even with the modifications for this study, seemed to slant the support picture in the positive direction. Even if Ridit analysis was conducted with the current study, results would have been skewed positively. Instruments that measure both the positive _and_ negative aspects of the network would be more appropriate for this population especially since interview data supported the paradoxes that existed in relationships as well as in physical environments.

2. Work should be conducted that measures addiction, relapse, and recovery along more than one point in time to link when and how changes occur. The expanded Kahn and Antonucci model provides a framework to with which to map life courses. Time and timing are implicit in this model.

3. White and middle class pregnant women and new mothers who use substances are still populations not generally studied in the current literature. During the course of this study, there was a clinical shift in substance use from crack cocaine in African American and Latina women to speed and heroin use in White women. Future research should attempt to capture this population and investigate (a) whether or not depression and self-esteem change from pregnancy to birth and (b) whether network structure and the perception of social support is comparable to the population studied in this project. Before this can be accomplished, access issues will need to be addressed. Access continues to be problematic.

4. Queries about substance use or abuse among network members should include whether or not there was a past history of substance abuse _and_

if that network member is currently using. In this study, women who were in recovery and were important sources of support for sobriety by the women in this study. However, the modification to the NSSQ only asked if any of the identified network members ever had a problem with substance abuse and not if they were currently abusing substances.

As long as there are women suffering from addiction and as long as treatment services have difficulty adequately addressing the needs of women with children, clinicians, scientists, and the recovering community need to remain proactive in finding a solution to the problem. This study attempted to address health, personal resource and demand, and social environment factors that are involved with pregnant women and new mothers who used crack cocaine. The Kahn and Antonucci model was expanded in order to provide a road map for future work in this area.

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Appendix A
General Contentment

This questionnaire is designed to measure the degree of contentment that you feel about your life and surroundings. It is not a test, so there are no right or wrong answers. Answer each item as carefully and accurately as you can by circling the number that best fits your situation during the last month. Please begin.

	Rarely or none of the time	A little of the time	Some of the time	A good part of the time	Most or all of the time
1. I feel powerless to do anything about my life.	1	2	3	4	5
2. I feel blue.	1	2	3	4	5
3. I am restless and can't keep still.	1	2	3	4	5
4. I have crying spells.	1	2	3	4	5
5. It is easy for me to relax.	1	2	3	4	5
6. I have a hard time getting started on things I need to do.	1	2	3	4	5
7. I do not sleep well at night.	1	2	3	4	5
8. When things get rough, I feel there is always someone I can turn to.	1	2	3	4	5
9. I feel that the future looks bright for me.	1	2	3	4	5
10. I feel downhearted.	1	2	3	4	5
11. I feel that I am needed.	1	2	3	4	5
12. I feel that I am appreciated by others.	1	2	3	4	5
13. I enjoy being active and busy.	1	2	3	4	5
14. I feel that others would be better off without me.	1	2	3	4	5
15. I enjoy being with other people.	1	2	3	4	5
16. I feel it is easy for me to make decisions.	1	2	3	4	5
17. I feel downtrodden.	1	2	3	4	5
18. I am irritable.	1	2	3	4	5
19. I get upset easily.	1	2	3	4	5

Appendix A
General Contentment

	Rarely or none of the time	A little of the time	Some of the time	A good part of the time	Most or all of the time
20. It is hard for me to have a good time.	1	2	3	4	5
21. I have a full life.	1	2	3	4	5
22. I feel that people really care about me.	1	2	3	4	5
23. I have a great deal of fun.	1	2	3	4	5
24. I feel great in the morning.	1	2	3	4	5
25. I feel that my situation is hopeless.	1	2	3	4	5

Appendix B
Self Esteem

This questionnaire is designed to measure how you see yourself. It is not a test, so there are no right or wrong answers. Please answer each item as carefully and accurately as you can by circling the number that best reflects your feelings. Please begin.

	Rarely or none of the time	A little of the time	Some of the time	A good part of the time	Most or all of the time
1. I feel that people would not like me if they really knew me well.	1	2	3	4	5
2. I feel that others get along much better than I do.	1	2	3	4	5
3. I feel that I am a beautiful person.	1	2	3	4	5
4. When I am with other people I feel they are glad I am with them.	1	2	3	4	5
5. I feel that people really like to talk with me.	1	2	3	4	5
6. I feel that I am a very competent person	1	2	3	4	5
7. I think I make a good impression on others.	1	2	3	4	5
8. I feel that I need more self confidence.	1	2	3	4	5
9. When I am with strangers I am very nervous.	1	2	3	4	5
10. I think that I am a dull person.	1	2	3	4	5
11. I feel ugly.	1	2	3	4	5
12. I feel that others have more fun than I do.	1	2	3	4	5
13. I feel that I bore people.	1	2	3	4	5
14. I think my friends find me interesting.	1	2	3	4	5
15. I think I have a good sense of humor.	1	2	3	4	5
16. I feel very self conscious when I am with strangers.	1	2	3	4	5
17. I feel that if I could be more like other people I would have it made.	1	2	3	4	5
18. I feel that people have a good time when they are with me.	1	2	3	4	5
19. I feel like a wallflower when I go out.	1	2	3	4	5

Appendix B
Self Esteem

	Rarely or none of the time	A little of the time	Some of the time	A good part of the time	Most or all of the time
20. I feel I get pushed around more than others.	1	2	3	4	5
21. I think I am a rather nice person.	1	2	3	4	5
22. I feel that people really like me very much.	1	2	3	4	5
23. I feel that I am a likeable person.	1	2	3	4	5
24. I am afraid I will appear foolish to others.	1	2	3	4	5
25. My friends think very highly of me.	1	2	3	4	5

Appendix C
Norbeck Social Support Questionnaire (NSSQ)

SOCIAL SUPPORT QUESTIONNAIRE

PLEASE READ ALL DIRECTIONS ON THIS PAGE BEFORE STARTING

Please list each significant person in your life on the right. Consider all the persons who provide personal support for you or who are important to you.

Use only initials, and then indicate the relationship, as in the following example:

Initials   Relationship

1. M.T.   Friend
2. B.B.   Brother
3. M.D.   Mother
4. S.M.   Friend
5. M.R.   Neighbor

Use the following list to help you think of the people important to you, and list as many people as apply in your case.

            -spouse or partner
            -family members or relatives
            -work or school associates
            -neighbors
            -health care providers
            -counselor or therapist
            -minister/priest/rabbi
            -other

Your do not have to use all 24 spaces. Use as many spaces as you have important persons in your life.

When you finish your list, please turn to page 2.

1980 by Jane S. Norbeck, D.N.Sc.
University of California, San Francisco
Revised 1982

Appendix C

CODE #:
DATE:

PERSONAL NETWORK

	INITIALS	RELATIONSHIP	
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
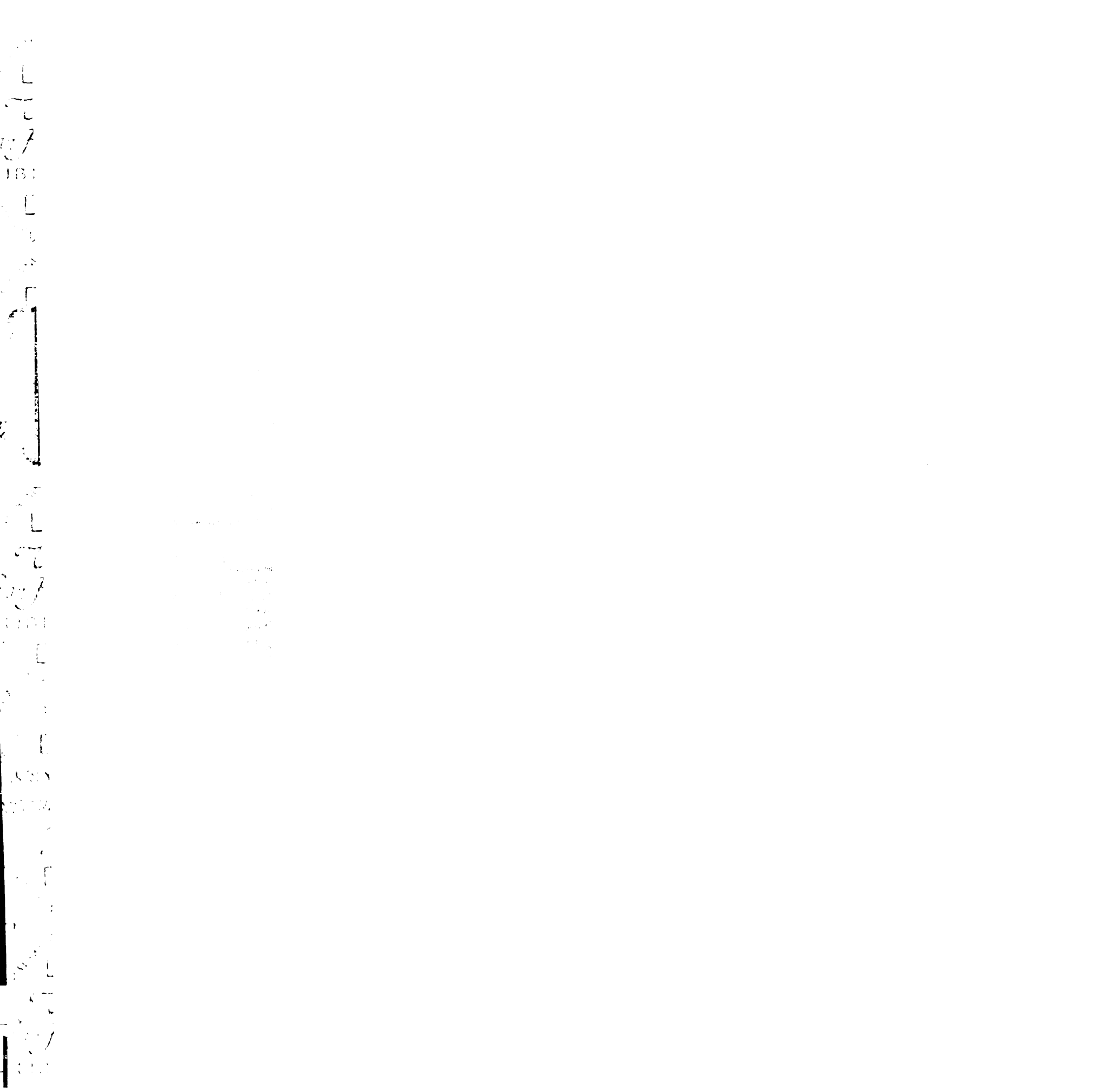
Appendix C

For each person you listed, please answer the following questions
by writing in the number that applies.

       1 = Not at all
       2 = A little
       3 = Moderately
       4 = Quite a bit
       5 = A great deal

QUESTION 1:   **QUESTION 2:**

How much does this person make you feel liked or loved?	How much does this person make you feel respected or admired?
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.
13.	13.
14.	14.
15.	15.
16.	16.
17.	17.
18.	18.
19.	19.
20.	20.
21.	21.
22.	22.
23.	23.
24.	24.

Appendix C

For each person you listed, please answer the following questions
by writing in the number that applies.

    1 = Not at all
    2 = A little
    3 = Moderately
    4 = Quite a bit
    5 = A great deal

QUESTION 3:   **QUESTION 4:**

How much can you confide in this person?	How much does this person agree with or support your actions or thoughts?
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.
13.	13.
14.	14.
15.	15.
16.	16.
17.	17.
18.	18.
19.	19.
20.	20.
21.	21.
22.	22.
23.	23.
24.	24.

Appendix C

CODE #:
Date:

1 = Not at all
2 = A little
3 = Moderately
4 = Quite a bit
5 = A great deal

QUESTION 5:	QUESTION 6:
If you needed to borrow $10, a ride to the doctor or some other immediate help, how much could this person usually help?	If you were confined to bed for several weeks, how much could this person help you?
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.
13.	13.
14.	14.
15.	15.
16.	16.
17.	17.
18.	18.
19.	19.
20.	20.
21.	21.
22.	22.
23.	23.
24.	24.

Appendix C

CODE #:
Date:

QUESTION 7:	**QUESTION 8:**
How long have you known this person? 1 = Less than 6 months 2 = 6 to 12 months 3 = 1 to 2 years 4 = 2 to 5 years 5 = more than 5 years	How frequently do you usually have contact with this person? (Phone calls, visits or letters) 5 = Daily 4 = Weekly 3 = Monthly 2 = A few times per year 1 = Once a year or less
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.
13.	13.
14.	14.
15.	15.
16.	16.
17.	17.
18.	18.
19.	19.
20.	20.
21.	21.
22.	22.
23.	23.
24.	24.

Appendix C

QUESTION 9:

During the past year, have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason? Please circle your answer.

　　　　　NO　　　　　　　　　　　　YES

If yes:

QUESTION 9A:

Please indicate the number of persons from each category who are <u>no longer available</u> to you.

Spouse or partner:
Family members or relatives:
Friends:
Work or school associates:
Neighbors:
Health care providers:
Counselor or therapist:
Minister/Priest/Rabbi:
Other (Specify):

QUESTION 9B:

Overall, how much of your support was provided by these people who are no longer available to you? Please circle the best response.

　　　　　None at all

　　　　　A little

　　　　　A moderate amount

　　　　　Quite a bit

　　　　　A great deal

Appendix D

TIME 1

INTERVIEW QUESTIONS

A) Opening Questions:

1) Tell me how you spend a typical day.

2) What do you do for enjoyment?

3) What do you do to relieve stress?

B) Present Drug Use:

1) Are you currently using drugs or alcohol? (Describe.) If No, when was the last time you used? What did you use?

2) When you do/did use drugs, how do/did you use it/them? How often? Did you use any other drugs or alcohol? When, during the pregnancy did you use?

3) Have you recently tried to quit or cut down on your drug or alcohol use? (If yes, How?)

4) Do you have other children? Do they live with you? (If no, describe.)

5) (If yes to children...) Are your children aware of your drug use?

6) Who primarily takes care of you children?

C) Past Substances History:

1) Tell me the story about your drug &/or alcohol use.

2) When did you start using? What made you use more?
What made you use less?

3) What was the event that led to the first use? Can you tell me how it progressed until now?

   (If she sold drugs prior to using them, What was it that got her started with selling drugs?)

4) How did you feel using drugs in the past? Now?

5) Have you ever stopped using drugs? (If yes, what was it like?)

Appendix D

6) Have you ever been in any recovery programs? (If yes, describe it/them? Did it/they help?)

7) Have you ever been in counseling? (If yes, describe.)

8) How have you gotten money to buy drugs? Have you ever done anything else to get drugs?

9) Have you ever been involved with Child Protective Services? (If yes, describe.)

10) Have you ever been involved with the law? (Describe.)

11) When was the first time you used crack? How did it progress until now?

12) Who knows about your drug use? How do they feel about it?

D) Family of Origin:

1) Tell me about your family. (If there are only statements of positive or negative ask about the opposing sides. Get the full dimensions "good" & "bad".

2) Who mothered you as a child?

    2A) What does being a mother mean to you?

3) Have other family members or people who lived in your home used drugs or alcohol? (If yes, who? Relationship? What did they use? Still using?)

4) Was or is anyone in your family depressed or mentally ill? (If yes, what was this like?)

5) Were you ever physically, sexually, or emotionally abused as a child?

E) Pregnancy:

1) Have you been receiving regular health care? (If yes, describe.)

2) When did you know you were pregnant?

3) How did you feel about it?
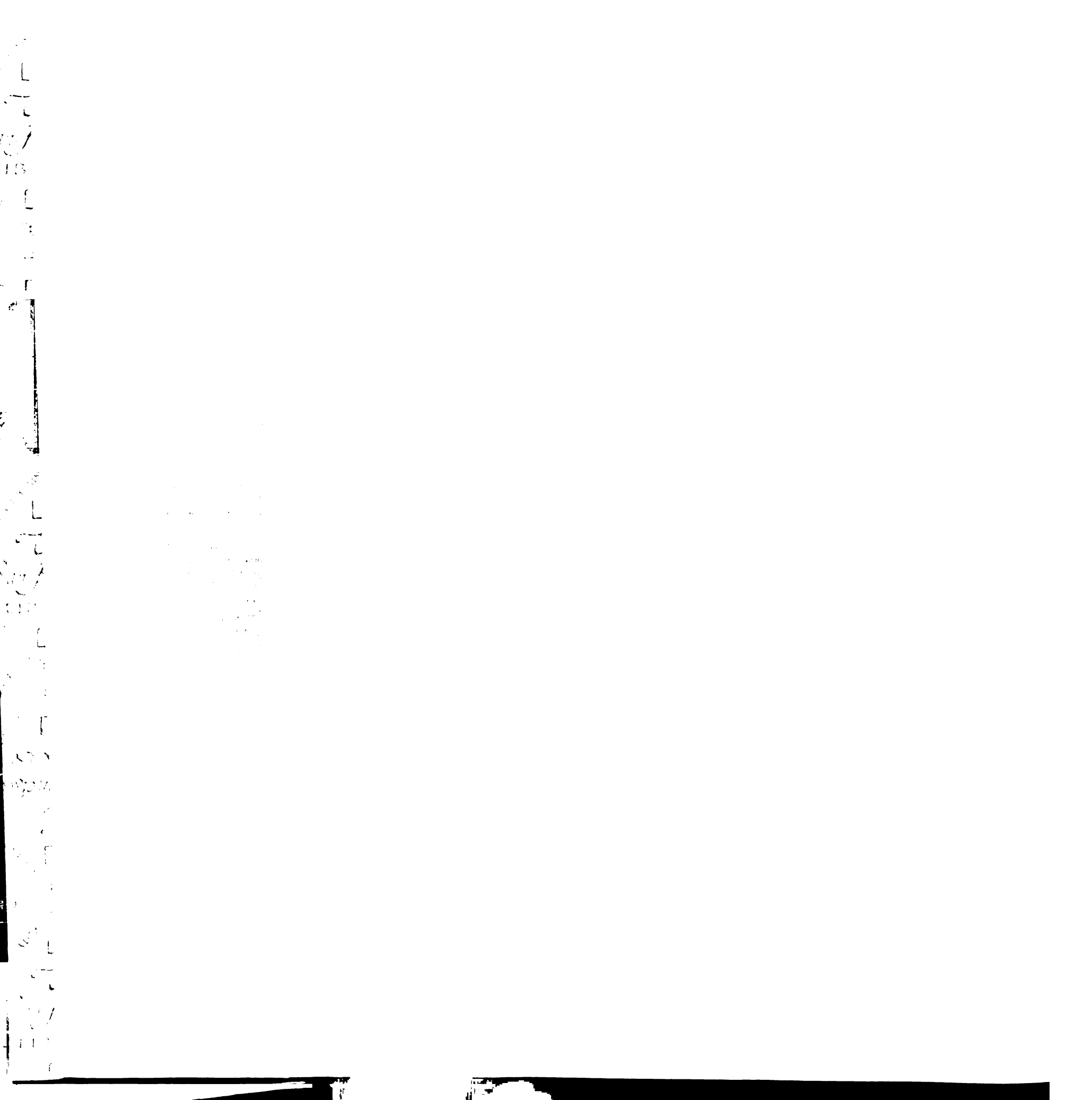
Appendix D

4)   How do you feel about becoming a mother?

5)   How does your family feel about this pregnancy?

6)   Had you at any time considered termination?

7)   How did you decide to keep this pregnancy?

8)   What is your situation with Housing?   Food?   Income?

Transportation?

9)   How did you decide to start prenatal care?

10) Have you used crack during this pregnancy?   (If yes, Last time?

What about with other pregnancies?)

Have you used other drugs or alcohol during this pregnancy?

11) Do you worry about your drug use while you are pregnant?   (If yes,

describe.)

12) Do you have concerns about your pregnancy?   (Describe)

13) Have you ever worried about AIDS?   (Describe)

14) Do you think your drug use can or did harm your baby/babies?   If

yes, in what way?

F) FOB:

1)   Tell me about the father of the baby.   What is he like?   What is

your relationship like with him?

2)   Is the FOB your current partner?   Is he the FOB of your other

children?

3)   How long have you been together?

4)   How long have you been sexually active with this partner?   Have you

used contraception?   (If yes, what type?)

5) Do you know about safe sex?   Describe what you know about it.   Do you

practice safe sex?

Appendix D

6) Have you ever been physically threatened, abused, or involved in any fights or beatings? By whom? Describe the situation. What about during this pregnancy? If yes, describe the situation.

7) Does the FOB use drugs/alcohol? Crack? Do you use together?

G) Response to Health Care System/Providers:

1) Why did you choose your current provider?

2) What was your first impression of your first prenatal visit?

3) What was your first impression of your health care provider?

4) Did you tell your provider about your drug use? Why or Why Not?

5) Are there any good things about receiving prenatal care? (If yes, would you describe these?)

6) Are there any bad things about receiving prenatal care? (If yes, would you describe these)

7) Did your provider say or do anything that you found helpful or liked? (If yes, describe)

8) Did your provider say or do anything that was not helpful or that you didn't like? (If yes, describe)

9) What would be your suggestions for health care providers who take care of pregnant women who use drugs or alcohol? How should they take care of these women?

10) Do you follow the advise of the doctors, nurses and/or social workers?

11) Has your health care provider affected your life in any way? (If yes, How?)

12) Were you at any time afraid you would not be able to take your baby home with you? (If yes, describe)

Appendix D

13) Have you ever felt discriminated against in any way? (If yes,

describe in what way and in relationship to what e.g. race, drug use,

welfare system participant)

14) What did you want from the health care system? Did you get it?

15) What did you want from your health care provider? Did you get it?

If you were going to develop a pregnancy and new mother program

for women who use drugs or alcohol, How would you make it work? What

would you include? How would you want the doctors and nurses to take

care of these women? What would you do to help the women with their

recovery?

16) (If other children...) Do you have childcare for your prenatal

appointments? (Describe)

17) How do you get to your appointments?

18) Would you like support, recovery, and/or educational groups at your

prenatal clinic? (If yes, describe what type)

19) Do you think there would be any benefit in having many resources in

one setting (e.g. PHN, Recovery programs, WIC, Medi-cal, etc.)? Would

you use it?

20) What, in your life, is causing you the most stress?

Do you think your health care provider could help you with this? In

what way?

21) How do you think your life experiences compare with other women who

have been pregnant and used crack?

22) Do you have any final comments that would help us to better

understand about women who use drugs in pregnancy?

Appendix E

TIME 2

INTERVIEW QUESTIONS

A) <u>Opening Questions</u>:

1) Tell me how you spend a typical day.

2) What do you do for enjoyment?

3) What do you do to relieve stress?

B) <u>Present Drug Use</u>:

1) Are you currently using drugs or alcohol? (Describe.) If No, when was the last time you used? What did you use?

2) How do/did you use it/them? How often?

Did you use other drugs or alcohol?

What was the pattern of use during pregnancy?

Have you used at all since the baby was born?

Tell me about the pattern of use.

What triggers it?

3) Have you recently tried to quit or cut down on your drug or alcohol use? (If yes, How?)

4) Does your child/children live with you? Do you have other children? Do they live with you? (If no, describe.)

5) (If yes to children...) Are your children aware of your drug use?

6) Who primarily takes care of you children?

C) <u>Past Substances History</u>:

1) How did you feel using drugs in the past? Now?

2) Have you been in a recovery program? (If yes, describe it/them? Did it/they help?) Tell me about it. Helpful things? Not helpful things?

3) Have you been in counselling? (If yes, describe.)

4) What is your current income. Where does it come from?

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5) How have you gotten money to buy drugs? Have you ever done anything else to get drugs?

6) Have you ever been involved with Child Protective Services? (If yes, describe.)

7) Have you ever been involved with the law? (Describe.)

8) Who knows about your drug use? How do they feel about it?

9) Do you hide your drug use? If so, from whom? and What would happen if he/she/they found out?

10) Do you think about the future? If yes, What do you see for yourself and your baby.

D) Family of Origin:

1) Tell me about your family since the baby was born. (If there are only statements of positive or negative ask about the opposing sides. Get the full dimensions "good" & "bad".

2) Who do you currently live with?

E) Pregnancy & Postpartum:

1) Did you receive regular health care? (If yes, describe.) (How often, What were the visits like?)

2) Did you have any problems with the pregnancy? Describe.

3) Tell me about your birth experience. What were your impressions of the L&D staff?

4) Would you return to the same provider in a future pregnancy? Why or Why not?

5) Have you been in contact with any health services since your delivery? What type? With whom? How was it?

6) How has your family responded to the birth?

7) How does your family feel about the baby?

Appendix E

8) Do you need halp with food, transportation, housing, income? Have you received help with any of these?

9) Did you use crack during the pregnancy? How long? When was the last time? Are you still using crack or any drugs or alcohol? What kind? How often? What about with other pregnancies?

10) Do you think your drug use harmed your baby/babies?

11) Did you attend prenatal classes? If yes, what kind? Were they helpful? If not, why not?

12) Do you worry about getting AIDS? Do you know about safe sex? Describe what you know. Do you practice safe sex?

13) Are you using contraception? What kind? How did you pick that type?

F) FOB:

1) Tell me about the father of the baby. What is he like? What is your relationship like with him?

2) Is the FOB your current partner? Is he the FOB of your other children?

3) How long have you been together?

4) How long have you been sexually active with this partner? Have you used contraception? (If yes, what type?)

5) Do you know about safe sex? Do you practice safe sex?

6) Have you ever been physically threatened, abused, or involved in any fights or beatings? By whom? What about during this pregnancy?

7) Does the FOB use drugs/alcohol? Crack? Do you use together?

8) Has your relationship changed with him since the baby was born? In what way?

Appendix E

G) Response to Health Care System/Providers:

1) Why did you choose your current provider?

2) What was your first impression of your first prenatal visit?

3) What was your first impression of your health care provider?

4) Did you tell your provider about your drug use? Why or Why Not?

5) Are there any good things about your prenatal care? (If yes, describe)

6) Are there any bad things about your prenatal care? (If yes, describe)

7) Did your provider say or do anything that you found helpful or liked? (If yes, describe)

8) Did your provider say or do anything that was not helpful or that you didn't like? (If yes, describe)

9) Has your relationship with your health care provider changed during this pregnancy? For the better or worse? Give examples.

10) What would be your suggestions for health care providers who take care of pregnant women who use drugs or alcohol? How should they take care of these women?

(GET EXAMPLES)

11) Do you follow the advise of the doctors, nurses and/or social workers?

12) Has your health care provider affected your life in any way? (If yes, How?)

13) Were you at any time afraid you would not be able to take your baby home with you? (If yes, describe)

14) Have you ever felt discriminated against in any way? (If yes, describe in what way and in relationship to what e.g. race, drug use, welfare system participant)

Appendix E

15) What did you want from the health care system? Did you get it?

16) What did you want from your health care provider? Did you get it?

17) If you were going to make a pregnancy and new mother clinic for women who use drugs or alcohol, How would you run the show? What would you include? How would you want the doctors and nurses to take care of these women? What would you do to help the women with their recovery?

18) (If other children...) Do you have childcare for your prenatal appointments? (Describe)

20) How do you get to your appointments?

21) Would you like support, recovery, and/or educational groups at your prenatal clinic? (If yes, describe what type)

22) Do you think there would be any benefit in having many resources in one setting (e.g. PHN, Recovery programs, WIC, Medi-cal, etc.)? Would you use it?

23) What, in your life, is causing you the most stress? Do you think your health care provider could help you with this? In what way?

24) How do you think your experiences of being pregnant and using drugs compares with other women? (who use and who don't use)

25) What was it that made you decide to join the study?

26) Do you have suggestions for how we can get other pregnant women who have used crack to join the study?

27) Do you have any final comments that would help us to better understand about women who use drugs in pregnancy?

Appendix F

2/26/98

THE MISTRESS

She's a beautiful MISTRESS
    Sparkling, Dazzling, Playful
She bestows her alluring charms
    Mysterious, Captivating, Dangerous
She promises the World
    Enticing, Encouraging, Urging
She massages away the Pain
    Hypnotically, Sensually, Subtly
She places herself between ALL others
    Jealously, Possessively, and Convincingly

Armed with your blinders and her lies
    she whispers her sweet nothings directly to your brain.
She sends her other lovers
    to Advocate for her
Her Grip
    Tighter around your being
You Take HER In.

She leads you in the Vortex Dance
    holding you tight
        Whirling...Whirling
            Losing Sensibilities...to Darkness
           Losing Self...to Darkness
              Sucking Out the Spirit from your body
Leaving only the barest nub

                  Dead Eyes
                  Dead Heart
                  Dead Life

A joyless, loveless MISTRESS she has become
Leaving you with a nub for a soul
Removing intimacy from your life
            But she's a Beautiful MISTRESS
            Who bestows her charms
            Who promises the world
            Who massages away the PAIN.

                  Susan L. Adams

Table 1.

Concepts, Indicators, Measures

| | |
Concepts & Indicators	Measures
Personal Resources & Demands	
Self-esteem	ISE (T1/T2)[1]
Depression/Well-being	GCS (T1/T2)
Demographics	Age, Ed, Income
Social Environment	
Network	NSSQ (T1/T2)/Interviews
Support	NSSQ (T1/T2)/Interviews
Emotional support	
Tangible aid	
Physical environment	Interviews
Health Factors	
Substance Use	Medical Record and
Recovery Program	Self Report (T1/T2)
Contraception	
STDs	
Obstetrical Outcomes	
Infant Outcomes	

---

[1]T1 = Time 1 pregnancy interview and T2 = Time 2 postpartum interview.

Table 2.

Protocol for Measurement

Time 1 9 - 38 Weeks of Pregnancy (Mean 27.2 wks.)	Time 2 3 - 5 Months Postpartum
Consent ISE GCS NSSQ Interview	ISE GCS NSSQ Interview
	Identification of substance users in the network
	Review of the medical records for demographic information and pregnancy and birth outcomes

Table 3.

Treatment and Delivery sites

Treatment Sites	N(in treatment at T1 or T2)	Percent
Residential treatment sites -	20	68.9%
K-H	11	37.9%
B-H	5	17.2%
N-H	2	6.9%
Q-H	2	6.9%
Not in residential treatment at T1 or T2	9	31%

Delivery Sites (All urban hospitals)	N (Total n=30)	Percent
V	15	50%
H	4	13.3%
T	8	26.7%
D	2	6.7%
O	1	3.3%

Table 4.

Demographics (Age, Education, and Race)

Demographics	N	$\overline{X}$ (SD)	Median	Range
Age	30	31.8 (6.8)	32.5	20 - 44
Education	27	11.5 (2.1)	11	8 - 18

Demographics	N (%)
Race (N=29)	
African American	18 (60%)
Latina	5 (17%)
Caucasian	3 (10%)
Black/Latina mix	2 (7%)
Other	1 (3%)

Table 5.

Demographics (Occupation, Income, Insurance, Marital)

Demographics	N (%)
Occupation (N=30)	
None	17 (57%)
Homemaker	6 (20%)
Student	3 (10%)
Cashier/waitress	2 (7%)
Finance	1 (3%)
Prostitute	1 (3%)
Income (N=30)	
Less than $10,000/yr	29 (97%)
Less than $25,000/yr	1 (3%)
Insurance (N=30)	
Medicaid	28 (94%)
No insurance	1 (3%)
Private/HMO	1 (3%)
Marital status (N=30)	
Single/heterosexual	18 (60%)
Unmarried/involved	4 (13%)
Married	3 (10%)
Divorced	3 (10%)
Single/lesbian	2 (7%)
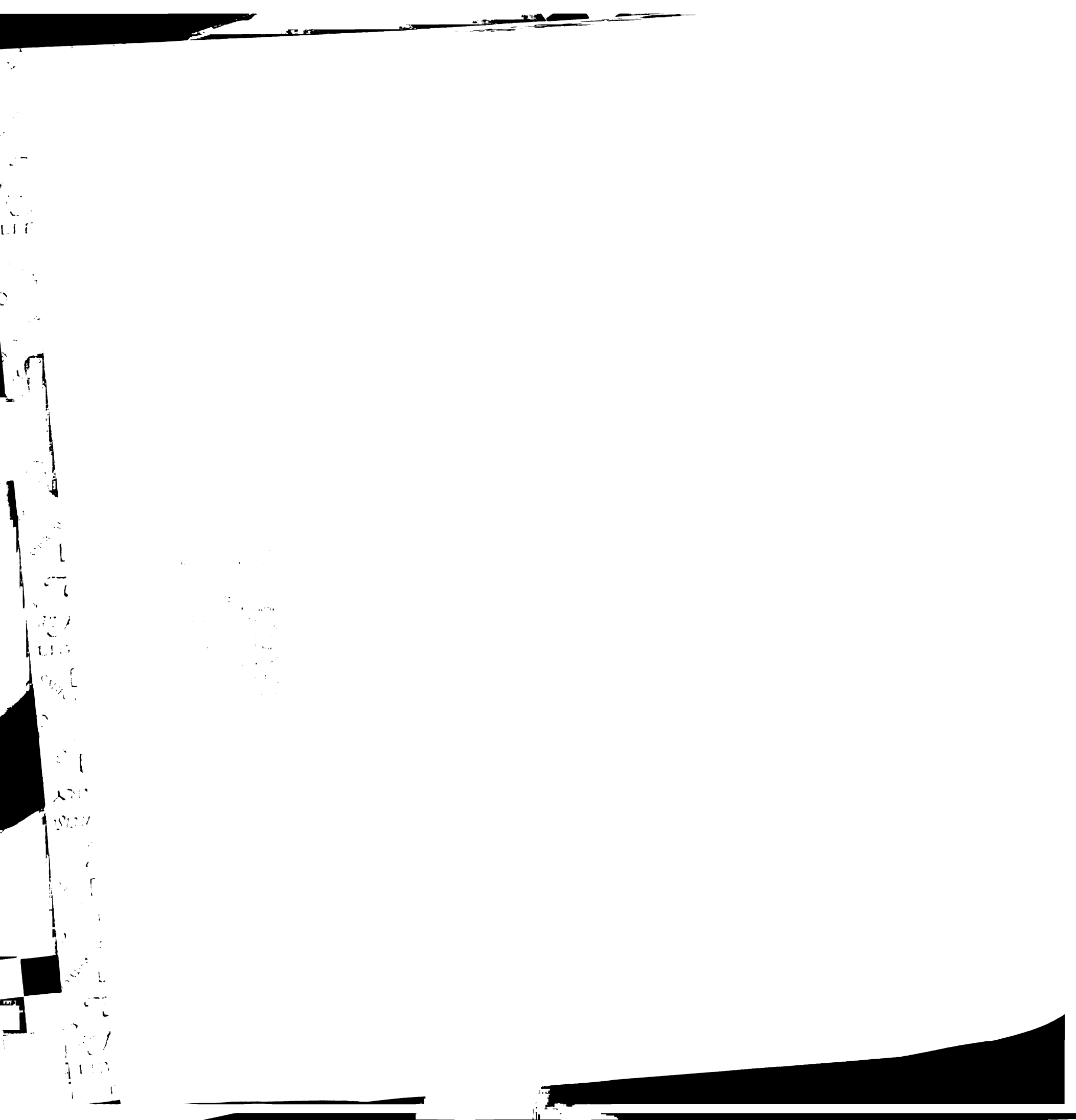
Table 6.

Health Factors (Treatment)

Type of Treatment Services	Time 1 (n=30)	Time 2 (n=26)
Not in treatment/did not identify treatment	20% (6)	34.6% (9)
Psychiatric counseling only	3.3% (1)	---
12 step program only	---	3.8% (1)
Outpatient treatment program	13.3% (4)	23.1% (6)
Residential treatment program	63.3% (19)	38.5% (10)

Table 7.

Health Factors (Substance Use)

Substances Used	n (ever used in life)	n (used during pregnancy)	First time used (years)			
			Mean	Median	SD	Range
Alcohol	26	19	12.5	13	3.7	4 to 18
Cigarettes	27	24	12.6	11.5	5.3	4 to 27
Crack-cocaine	30	30	21.5	19	7.0	10 to 36
Marijuana	24	11	14.6	14	3.2	10 to 22
Other drugs	17	2	18.7	18	4.7	10 to 27

Amount of Substances Used

Amount of use	n (total responders)	Mean	Median	SD	Range
Alcohol use/wk before pregnancy (ounces)	24	158.3	35	280.2	0 to 1008
Alcohol use/wk during pregnancy (ounces)	23	96.8	6	233.8	0 to 1008
# of cigarettes used/day before pregnancy	26	15	10	15.8	0 to 60
# of cigarettes used/day during pregnancy	27	8.9	8	7.1	0 to 30
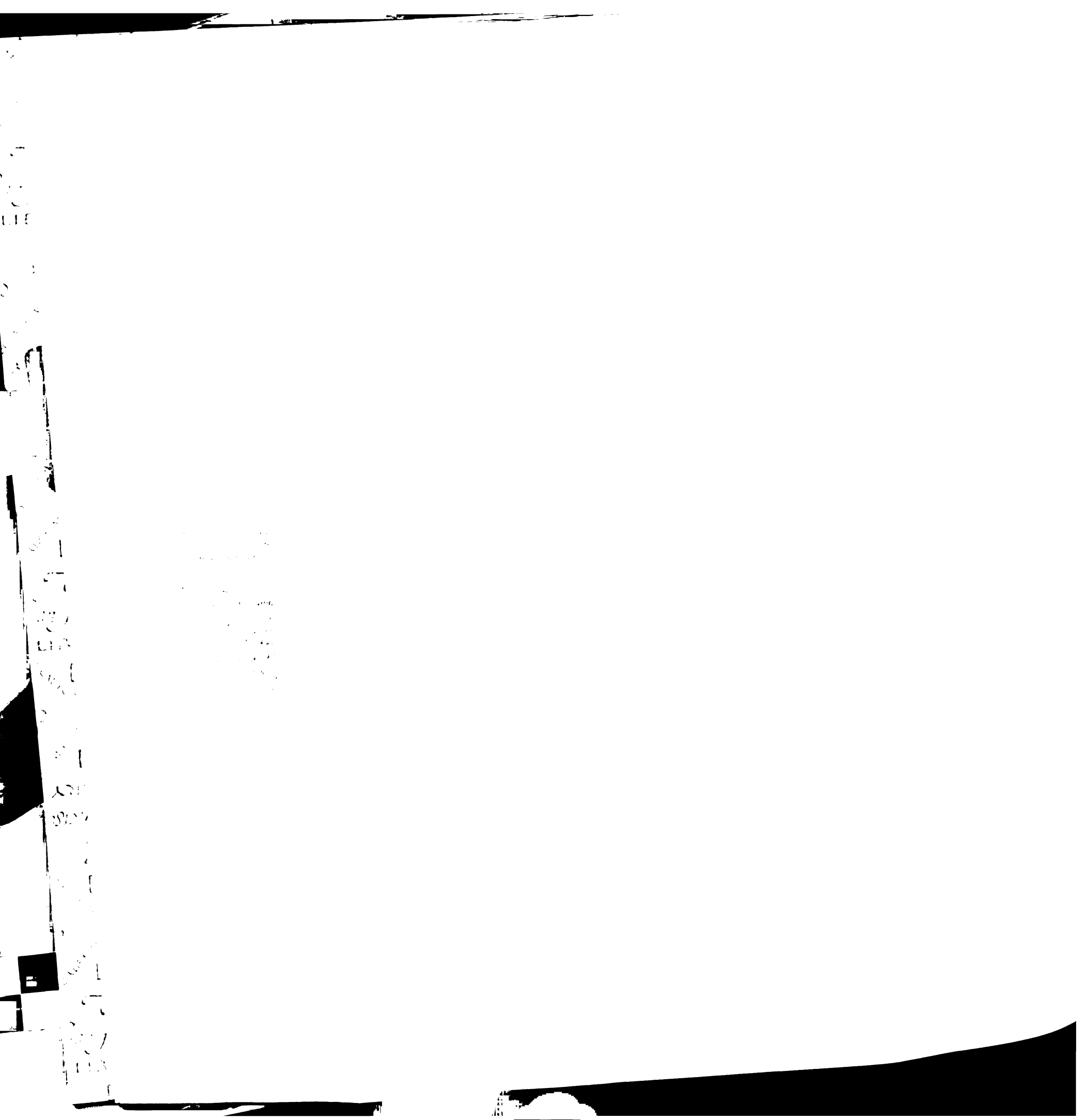
Table 8.

Health Factors (Substance Use at T1 and T2)

Substance Use Categories	(n)/Total who responded	Percent
Alcohol		
# who used alcohol before pregnancy	(26)/30	86.7%
# who used alcohol with pregnancy	(19)/27	70.4%
# who used alcohol postpartum (T2)	(3)/18	16.7%
Cigarettes		
# who smoked before pregnancy	(27)/29	93.1%
# who smoked with pregnancy	(24)/27	88.9%
# who smoked postpartum (T2)	(10)/12	83.3%
Marijuana		
# who smoked before pregnancy	(24)/30	80%
# who smoked with pregnancy	(11)/26	42.3%
# who smoked postpartum (T2)	(0)/15	---
Other Drugs (including heroin, lsd, pcp, speed)		
# who used before pregnancy	(17)/29	58.6%
# who used with pregnancy	(2)/24	8.3%
# who used postpartum (T2)	(0)/20	---
Crack (all used before and during pregnancy)		
# who used postpartum (T2)	(5)/20	25%

Table 9.

Health Factors (Reproductive Health History)

Reproductive Health Status	n	Percent
Unintended pregnancy (N=30)	25/30	83.3%
Past STDs (N=28)	20/28	66.7%
Birth control before pregnancy (T1)/(after pregnancy (T2))	**30/27**	
None	25/9	83.3%/33.3%
Condoms	2/2	6.7%/7.4%
Birth control pills	2/3	6.7%/11.1%
Norplant	1/1	3.3%/3.7%
Depoprovera	0/3	---/11.1%
Diaphragm	0/1	---/3.7%
Tubal ligation	0/8	---/29.6%
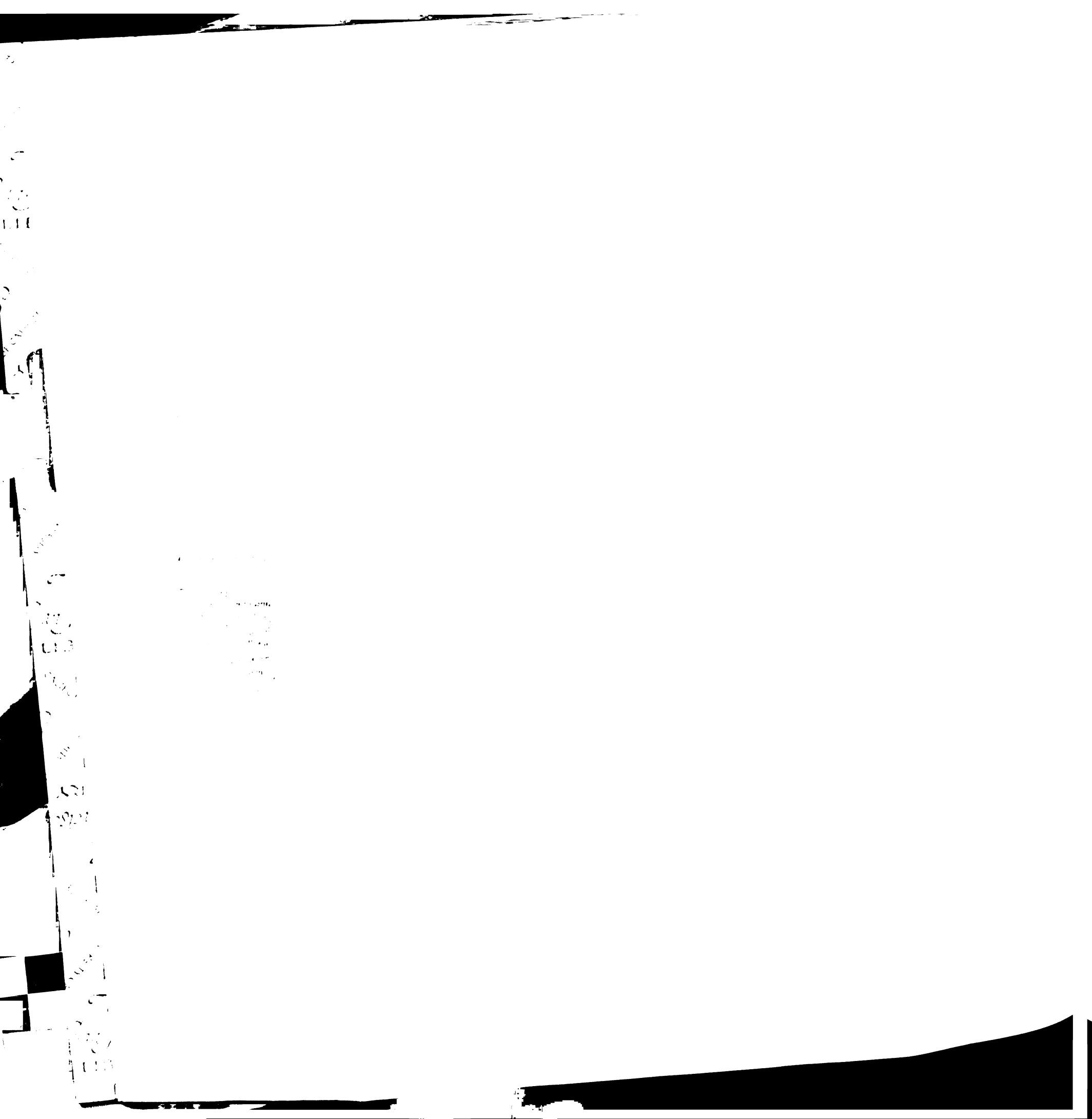
Table 10.

Health Factors (Intrapartum Data)

Intrapartum Data (N=27)	$\underline{n}$ (%)
Baby's Gender	
Females	14 (51.9%)
Type of Delivery	
Spontaneous vaginal birth	18 (66.7%)
Instrumented vaginal birth	4 (14.8%)
Cesarean birth	5 (18.5%)
Infant complications [1]	
None	14 (56%)
Prematurity	3 (12%)
IUGR	1 (4%)
Tachycardia	1 (4%)
Meconium	2 (8%)
Sepsis	1 (4%)
Cheek laceration from C-section	1 (4%)
Fetal Demise	2 (8%)

---

[1]

Based on data from 25 cases. Three cases were not available at Time 2 because the mothers left the study. Two cases did not document whether or not neonatal complications were present.
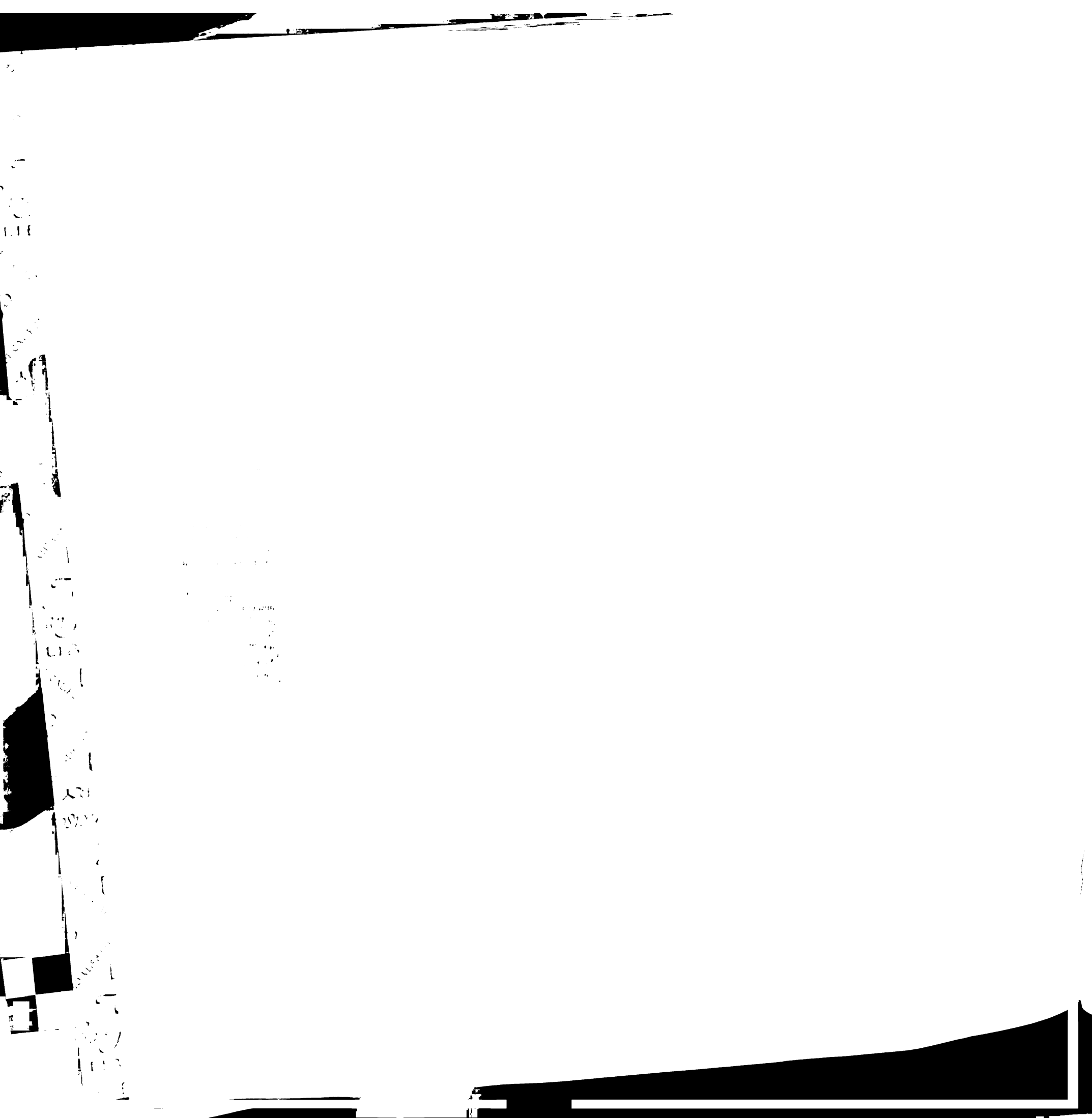
Table 11.

Health Factors (Obstetric/Infant)

Obstetric & Infant Dimensions	N	Mean	Median	sd
Five minute APGAR score	27	8.2	9	2.4
Gestation at first Ob visit *1	30	15.3	13.8	8.4
# of prenatal visits *2	25	9	9	5.2
# of hospital days for mother	26	4.2	2.5	8.9
# of hospital days for baby	25	2.6	2	2
Liveborn infant birthweight in grams	26	3033	2993	912
Gestational age at birth (in wks) *3	25	38	39	4.6
# of living children at T2 *4	29	3.5	3	2

*1 Gestation at first Ob visit range = 6 to 31.7 weeks
*2 # of prenatal visits range = 2 to 24
*3 Gestational age at birth (in wks) = 31.4 to 42 weeks
*4 # of living children at T2 = 1 to 8
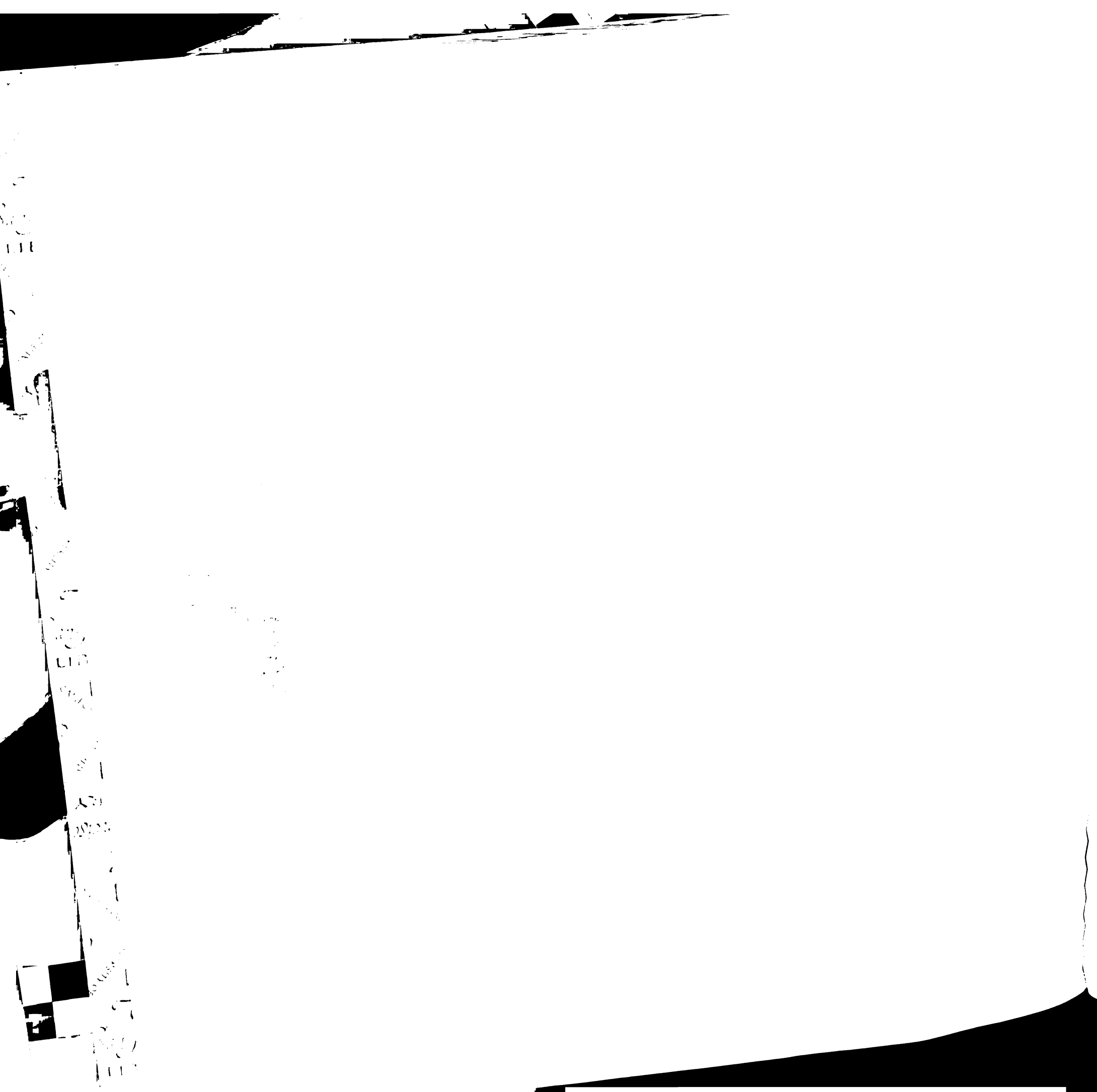
Table 12.

Health Factors (Violence)

Violence History Categories (N=30)	n	Percent
History of child abuse	20	66.7%
History of sexual assault	19	63.3%
History of domestic violence	20	66.7%
History of other violence	15	50%
History of criminal involvement (includes: drug sales, possession, prostitution, theft, assault)	24	80%

Table 13.

General Contentment Scale (GCS)

TIME	n	M	SD	Median	range	alpha
Time 1	29	43.3	21.2	47	9-85	.94
Time 2	27	32.1	17.7	26	7-78	.93

(Lower scores for GCS = less depression and higher well-being.)

3 Levels of Depression and Well-being	Time 1 - n=29 %	Time 2 - n=27 %
Low depression/High well-being (scores=0-25)	31%	48.1%
Average well-being (scores=26-35)	6.9%	14.8%
High depression/Low well-being (scores>35)	62.1%	37%

(Low depression=high well-being and high depression=low well-being)

Table 14.

Depression Categories (T1 and T2)

7 Levels of Depression	Time 1 - n=29 %	Time 2 - n=27 %
Extremely low depression (scores=0-5)	---	---
Very low depression (scores=6-15)	10%	18.5%
Moderately low depression (scores=16-25)	20.7%	29.6%
Average well-being (scores=26-35)	6.9%	14.8%
Moderately high depression (scores=36-50)	20.7%	14.8%
Very high depression (scores=51-65)	27.6%	18.5%
Extremely high depression (scores=66-100)	13.8%	3.7%

(Low depression=high well-being and high depression=low well-being)
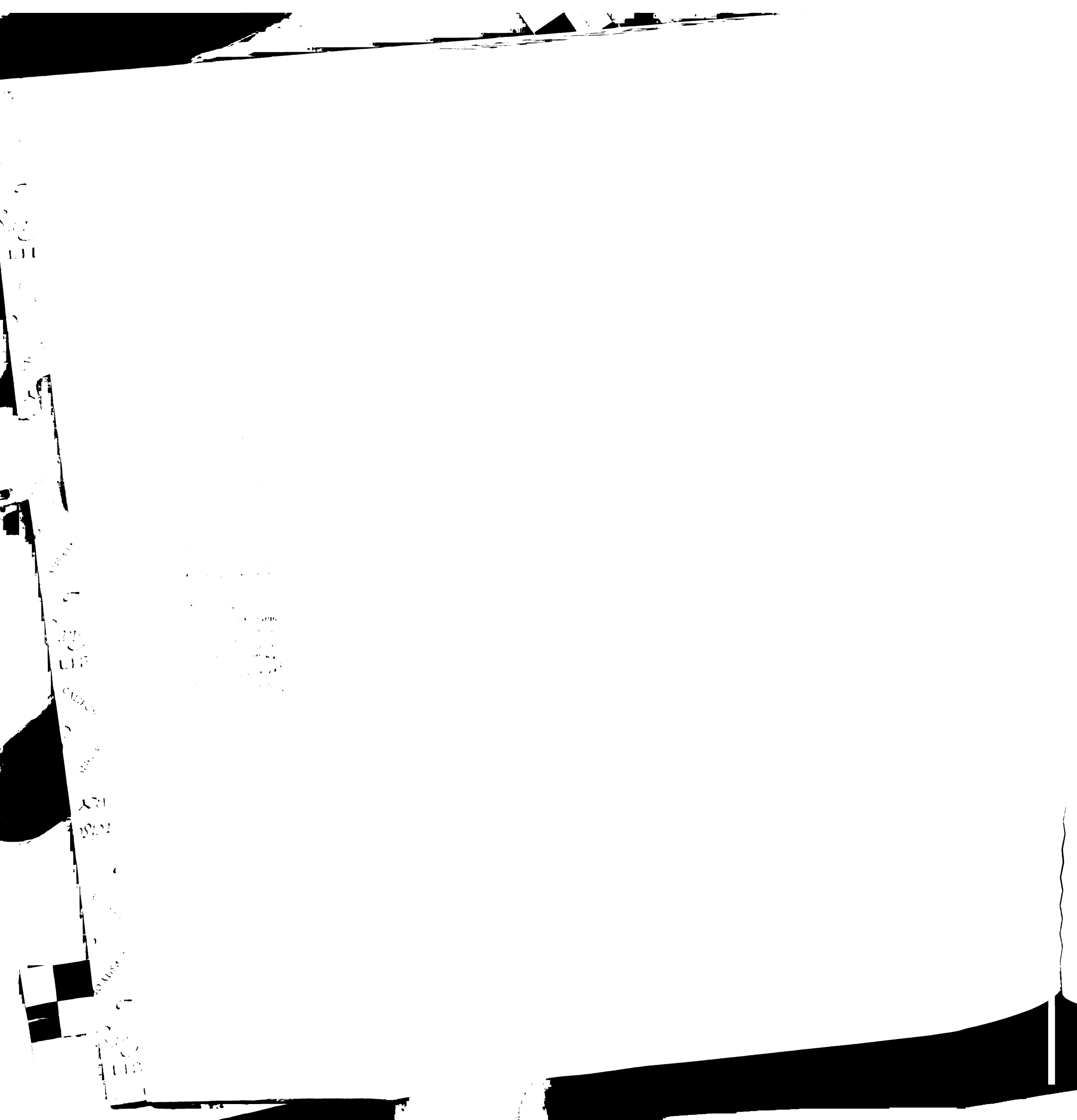
Table 15.

Index of Self-esteem (ISE)

TIME	n	M	SD	Median	range	alpha
Time 1	29	39.1	22.1	36	12-84	.95
Time 2	27	28.8	18.3	29.2	3-69	.94

(Lower scores for SE = higher self-esteem)

3 Levels of Self-esteem	Time 1 -n=29 %	Time 2 - n=27 %
Low self-esteem (scores>35)	51.7%	40.7%
Average self-esteem (scores=26-35)	17.2%	14.8%
High self-esteem (scores=0-25)	31%	44.4%

Table 16.

Self-esteem Categories (T1 and T2)

7 Levels of Self-esteem	Time 1 - n=29 %	Time 2 - n=27 %
Extremely low self-esteem (scores=66-100)	13.8%	3.7%
Very low self-esteem (scores=51-65)	13.8%	7.4%
Moderately low self-esteem (scores=36-50)	24.1%	29.6%
Average self-esteem (scores=26-35)	17.2%	14.8%
Moderately high self-esteem (scores=16-25)	10.3%	7.4%
Very high self-esteem (scores=6-15)	20.7%	33.3%
Extremely high self-esteem (scores=0-5)	---	3.7%
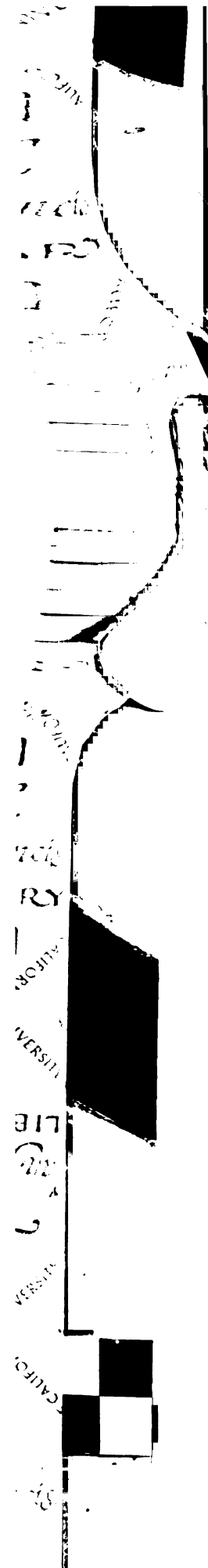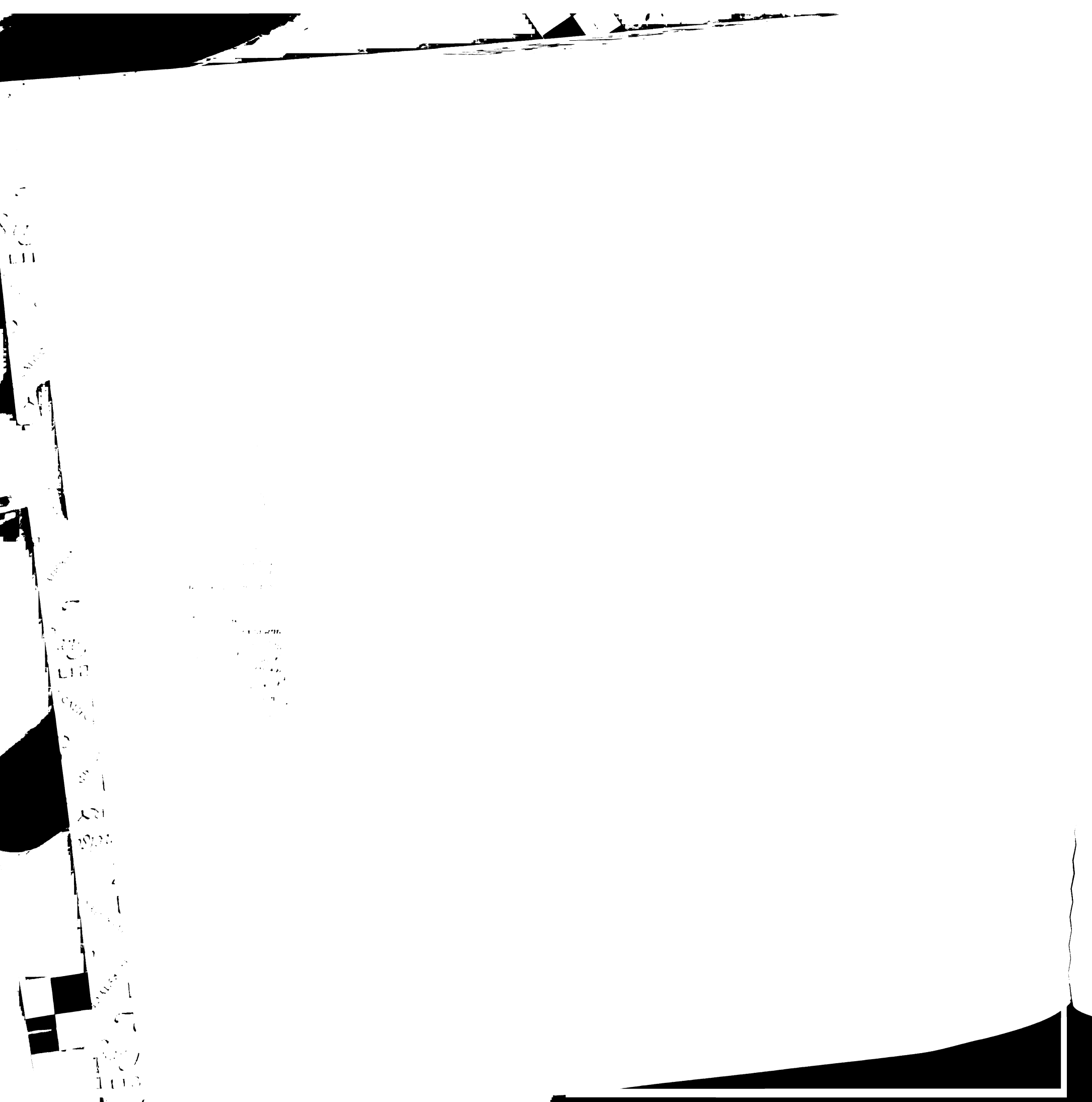
Table 17.

Family Network

# of Women Who Reported Members in Each Category by Time[1]

Total Network Members[2] (T1n, T2n)	Time 1 (N=29) n(%)	Time 2 (N=27) n(%)
Spouse/partner (13, 13)	13 (45%)	13 (48%)
Mother-in-law (5, 6)	5 (17%)	6 (22%)
Father-in-law (0, 1)	0	1 (4%)
Mother (14, 12)	14 (48%)	12 (44%)
Father (6, 7)	5 (17%)	7 (26%)
Sister (24, 22)	11 (38%)	10 (37%)
Brother (17, 19)	9 (31%)	9 (33%)
Grandmother (4, 2)	4 (14%)	2 (7%)
Aunt (4, 5)	4 (14%)	4 (15%)
Daughter (16, 15)	11 (38%)	8 (30%)
Son (6, 11)	6 (21%)	5 (19%)
Other family (22, 25)	13 (45%)	8 (30%)

---

[1]
Twenty-six women completed both of the Time 1 and Time 2 NSSQs.

[2]
Represents the total number of network members in each specific category for Time 1 & Time 2. There were 131 family network members at Time 1 and 138 family network members at Time 2.
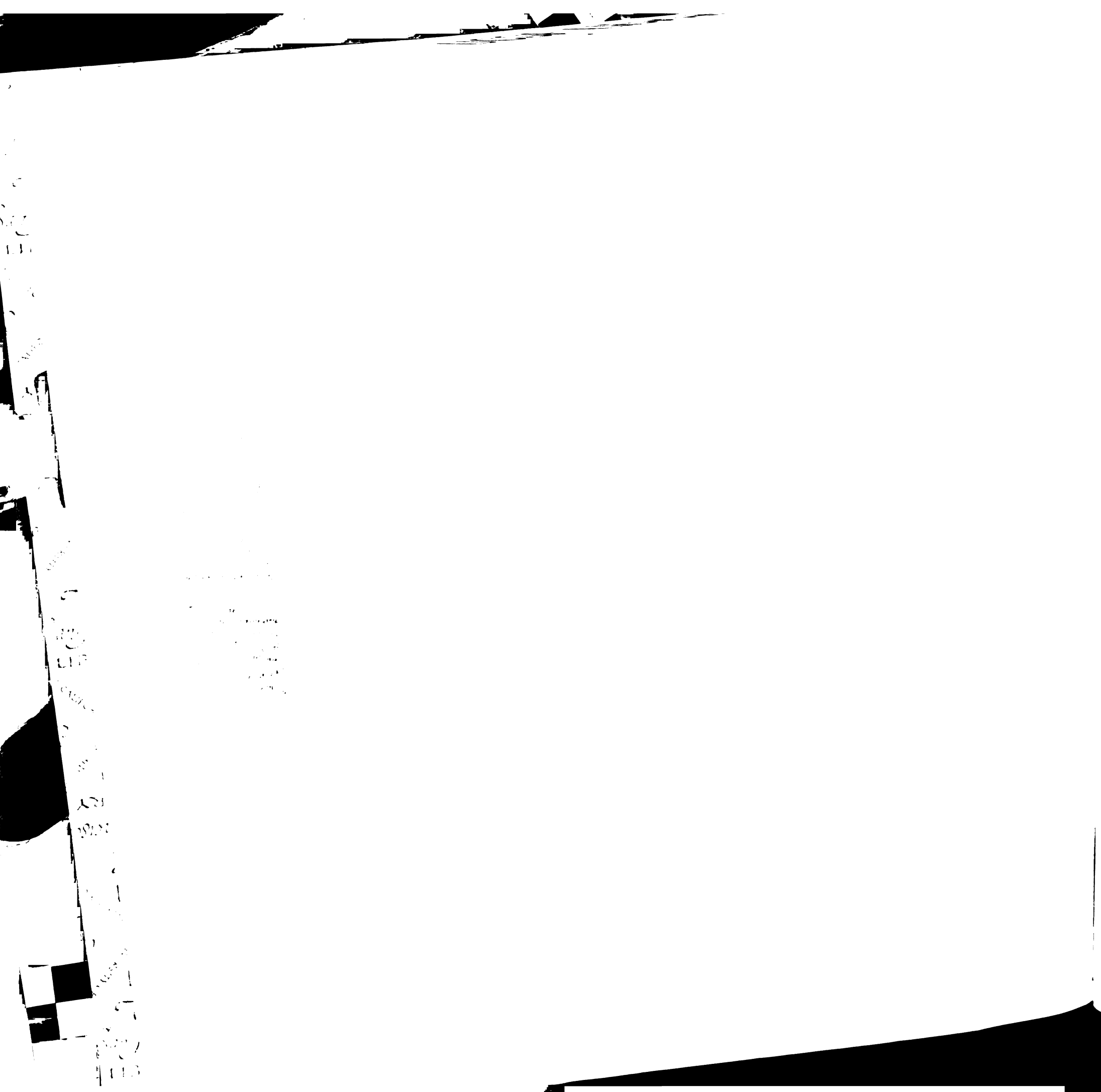
Table 18.

Non-family Network

# of Women Who Reported Members in Each Category by Time[1]

Total Network Members[2] (T1n, T2n)	Time 1 (N=29) n(%)	Time 2 (N=27) n(%)
Friends (57, 51)	19 (66%)	20 (74%)
Work/school (0, 0)	0	0
Neighbors (3, 0)	3 (10%)	0
Health Care (5, 6)	3 (10%)	4 (15%)
Counselors (23, 25)	9 (31%)	8 (30%)
Spiritual leaders (6, 6)	2 (7%)	2 (7%)
Other (3, 5)	2 (7%)	5 (19%)

---

[1]

Twenty-six women completed both of the Time 1 and Time 2 NSSQs.

[2]

Represents the total number of network members in each specific category for Time 1 and Time 2. There were 97 Time 1 non-family network members and 93 Time 2 non-family network members.

Table 19.

Substance Users in the Network

Network Members (T1n, T2n)	Time 1 Substance Users n (%)	Time 2 Substance Users n %
Spouse/partner (13, 13)	5 (39%)	4 (31%)
Mother-in-law (5, 6)	0	2 (33%)
Father-in-law (0, 1)	0	1 (100%)
Mother (14, 12)	5 (36%)	3 (25%)
Father (6, 7)	1 (17%)	0
Sister (24, 22)	7 (29%)	4 (18%)
Brother (17, 19)	12 (71%)	12 (63%)
Grandmother (4, 2)	2 (50%)	2 (100%)
Aunt (4, 5)	0	0
Daughter (16, 15)	1 (6%)	1 (7%)
Son (6, 11)	0	0
Other family (22, 25)	2 (9%)	4 (16%)
Friends (57, 51)	7 (12%)	10 (20%)
Neighbors (3, 0)	0	0
Health care providers (5, 6)	0	0
Counselors (23, 25)	0	0
Spiritual leaders (6, 6)	0	0
Others (3, 5)	0	0

Note: Although health care providers, counselors, and spiritual leaders were not identified as substance users, it may only be a function of the individual not being aware of substance use with those network members. The counselors in the programs at least partially consisted of individuals in recovery. The table, therefore, represents the most conservative estimates of substance users in the network.
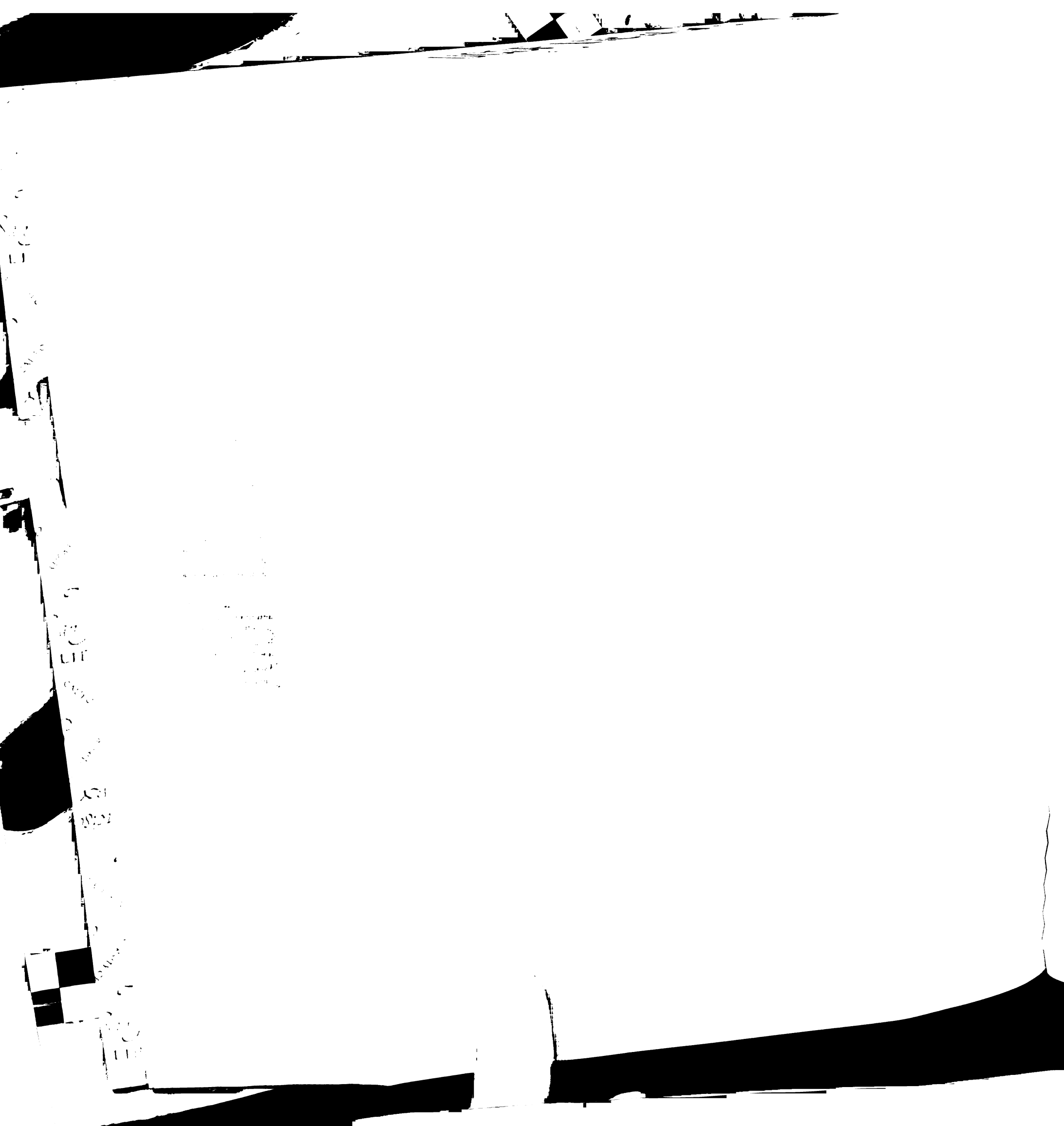
Table 20.

Categories of Substance Users in the Network

Network Members Categories (T1n, T2n)	Time 1 Substance Users n (%)	Time 2 Substance Users n %
Partner/family (18, 20)	5 (28%)	7 (35%)
Biological family (113, 118)	30 (27%)	26 (22%)
Friends, neighbors, others (63, 56)	7 (11%)	10 (18%)
Professionals (34, 37)	0	0
Total network (228, 231)	42 (18%)	43 (18%)

Note: Although health care providers, counselors, and spiritual leaders
were not identified as substance users, it may only be a function of the
individual not being aware of substance use with those network members.
The counselors in the programs at least partially consisted of
individuals in recovery. The table, therefore, represents the most
conservative estimates of substance users in the network.

Table 21.

Average Frequency of Contact[1] for Network Members by Time

Network Members (T1n, T2n)	Average Contact Time 1 $\underline{X}$ ($\underline{SD}$)	Average Contact Time 2 $\underline{X}$ ($\underline{SD}$)
Spouse/partner (13, 13)	4.3 (1.2)	4.2 (1.1)
Mother-in-law (5, 6)	4.6 (0.6)	4.7 (0.5)
Father-in-law (0, 1)	---	4.0 (---)
Mother (14, 12)	4.2 (1.0)	4.2 (0.7)
Father (6, 7)	3.4 (1.1)	4.3 (0.8)
Sister (24, 22)	3.9 (1.1)	3.6 (1.0)
Brother (17,19)	4.0 (0.8)	3.7 (0.7)
Grandmother (4, 2)	4.0 (1.2)	4.0 (---)
Aunt (4, 5)	4.0 (0.8)	3.3 (1.3)
Daughter (16, 15)	4.8 (0.4)	4.5 (0.5)
Son (6, 11)	4.5 (0.8)	4.7 (0.4)
Other family (22, 25)	4.0 (0.9)	3.4 (0.9)
Combined family[2] (113, 118)	**4.2 (0.8)**	**4.1 (0.8)**
Friends (57, 51)	3.8 (1.2)	4.2 (0.8)
Neighbors (3, 0)	3.7 (1.5)	(---)
Health care providers (5, 6)	3.7 (0.6)	3.1 (0.6)
Counselors/therapists (23, 25)	4.5 (0.7)	4.2 (1.0)
Spiritual leaders (6, 6)	3.5 (0.7)	2.5 (0.7)
Other (3, 5)	4.0 (---)	3.4 (1.1)

---

[1]

Once a year or less contact (1) to daily contact (5).

[2]

Combined family category combines the mother through other family categories.

Table 22.

Tangible Aid[1] During Pregnancy (Time 1) and Postpartum (Time 2).

TIME 1 Tangible Aid (n=29)	Not at all	A little bit	Moderately	Quite a bit	A great deal
Borrow money/ Get a ride	3.4%	27.6%	41.4%	13.8%	13.8%
Help when confined to bed	6.9%	10.3%	41.4%	31.1%	10.3%
Combined Aid	**5.1%**	**19%**	**41.4%**	**22.5%**	**12 %**
TIME 2 Tangible Aid (n=26)					
Borrow money/ Get a ride	0%	11.5%	53.9%	19.2%	15.4%
Help when confined to bed	0%	23.1%	30.7%	34.7%	11.5%
Combined Aid	**0%**	**17.3%**	**42.3%**	**27%**	**13.4%**

---

[1]

Percentages are based on the cumulative aid support score for each
participant divided by the number listed in their network.
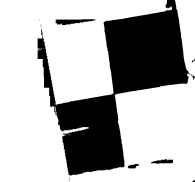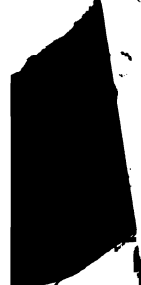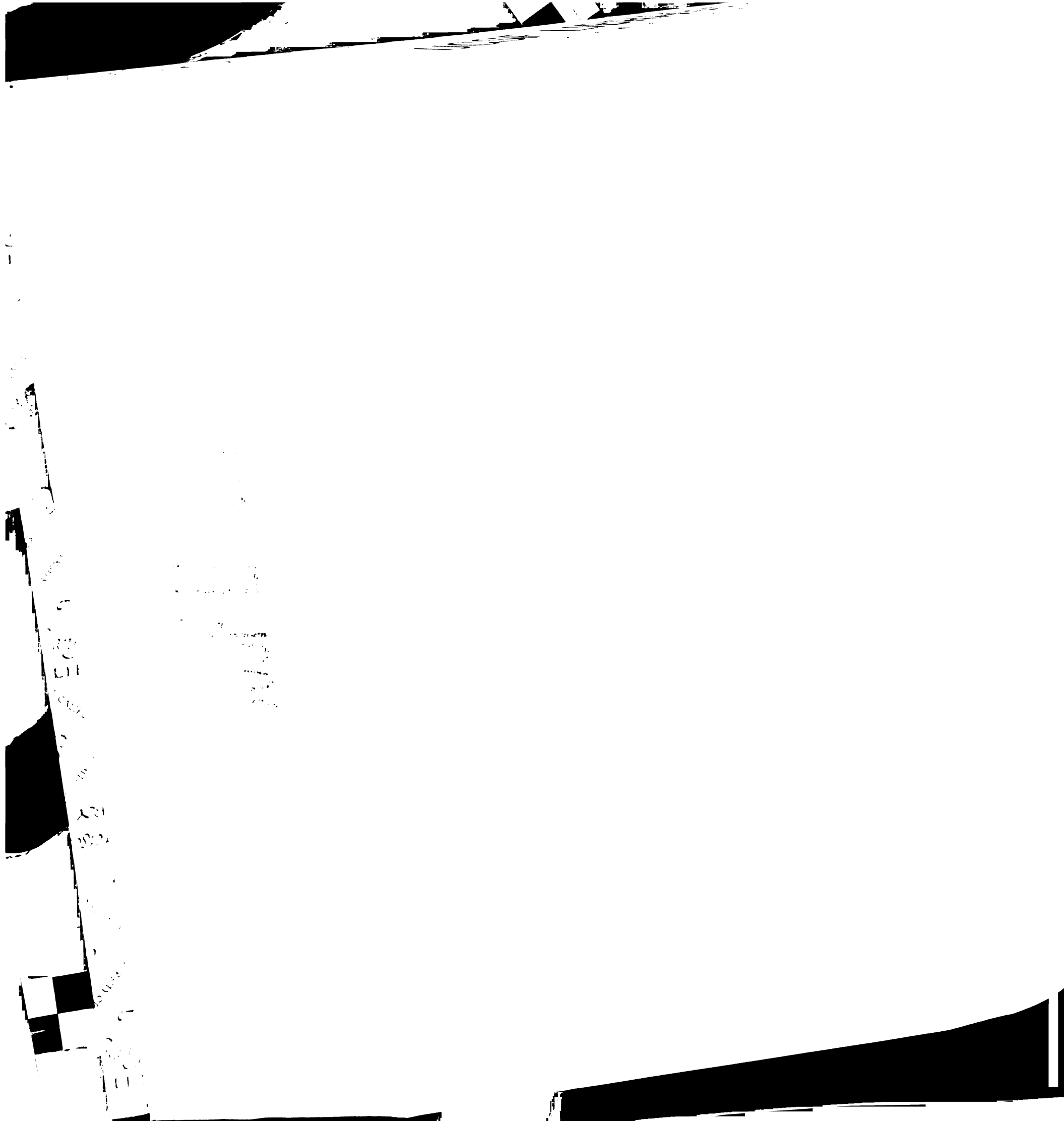
Table 23.

Emotional Support[1] During Pregnancy (Time 1) and Postpartum (Time 2).

TIME 1 Emotional Support (n=29)	Not at all	A little bit	Moderately	Quite a bit	A great deal
Like/love	0%	0%	31%	48.3%	20.7%
Respect/admire	0%	3.4%	27.6%	51.8%	17.2%
Can confide	0%	6.9%	44.8%	31.1%	17.2%
Agree/support actions/thoughts	0%	3.4%	38%	34.5%	24.1%
Combined score	**0%**	**3.4%**	**35.4%**	**41.4%**	**19.8%**
TIME 2 Emotional Support (n=26)					
Like/love	0%	0%	19.2%	50%	30.8%
Respect/admire	0%	0%	19.2%	46.2%	34.6%
Can confide	0%	0%	34.6%	38.5%	26.9%
Agree/support actions/thought	0%	0%	38.5%	42.3%	19.2%
Combined score	**0%**	**0%**	**27.8%**	**44.3%**	**27.9**

---

[1]

Percentages are based on the cumulative emotional support score for each participant divided by the number listed in their network.
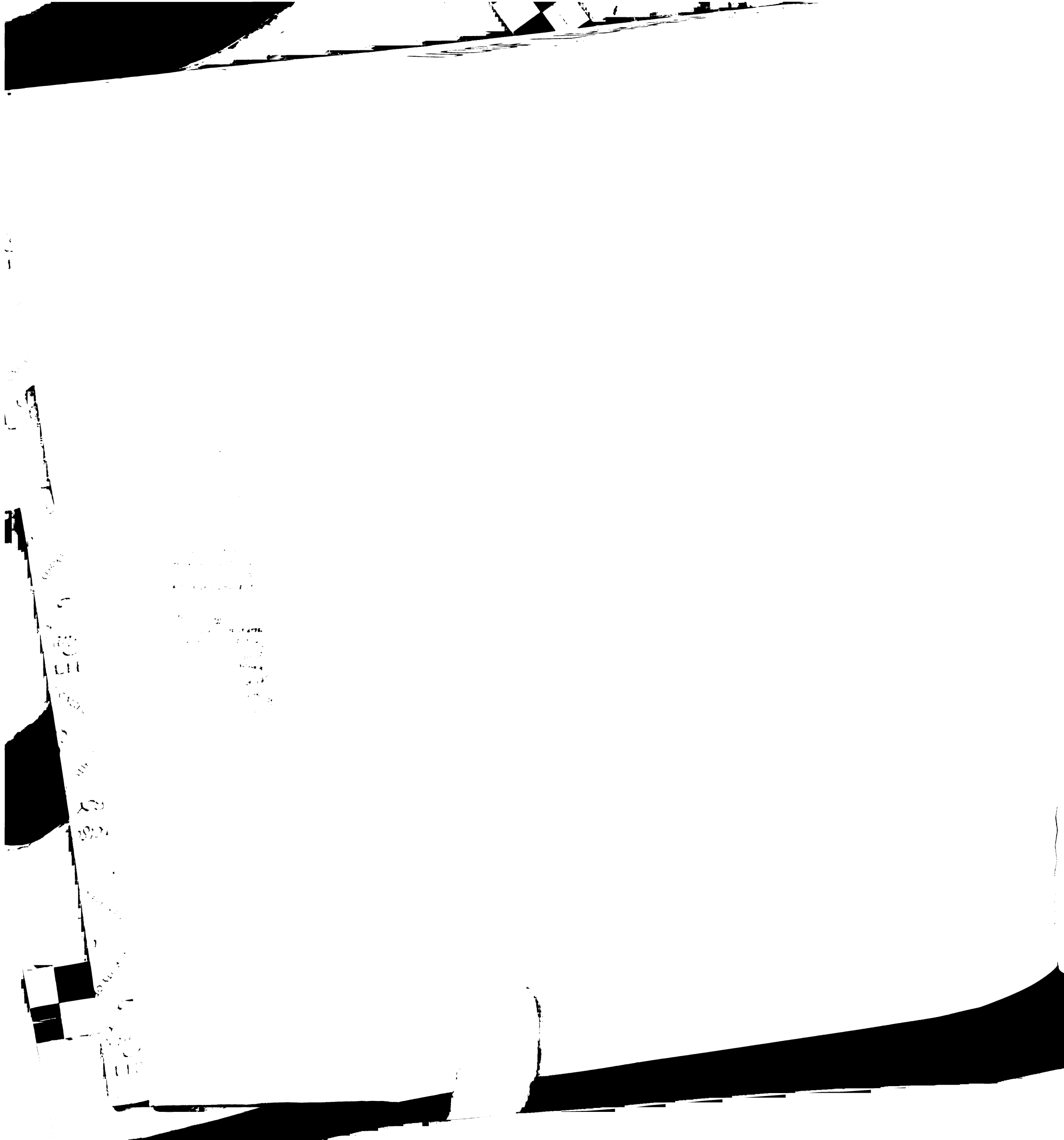
Table 24.

Low, Moderate, and High Tangible Aid[1] at Time 1 and Time 2.

TIME 1 Tangible Aid (n=29)	Low Aid %	Moderate Aid %	High Aid %
Borrow money/ride	31%	41.4%	27.6%
Help/confined to bed	17.2%	41.4%	41.4%
Combined Aid	**24.1%**	**41.4%**	**34.5%**
TIME 2 Tangible Aid (n=26)			
Borrow money/ride	11.5%	53.9%	34.6%
Help/confined to bed	23.1%	30.7%	46.2%
Combined Aid	**17.3%**	**42.3%**	**40.4%**

[1]
"Not at all" and "A little bit" were combined for the Low Support score and "Quite a bit" and "A great deal" were combined for the High Support score.

Table 25.

Low, Moderate, and High Emotional Support[1] at Time 1 and Time 2.

TIME 1 Emotional Support (n=29)	Low Support %	Moderate Support %	High Support %
Like/love	0%	31%	69%
Respect/admire	3.4%	27.6%	69%
Can confide	6.9%	44.8%	48.3%
Agree/support actions/thoughts	3.4%	38%	58.6%
Combined Score	**3.4%**	**35.4%**	**61.2%**
TIME 2 Emotional Support (n=26)			
Like/love	0%	19.2%	80.8%
Respect/admire	0%	19.2%	80.8%
Can confide	0%	34.6%	65.4%
Agree/support actions/thought	0%	38.5%	61.5%
Combined Score	**0%**	**27.8%**	**72.2%**

---

[1] "Not at all" and "A little bit" were combined for the Low Support score and "Quite a bit" and "A great deal" were combined for the High Support score.

Table 26.

Average functional support[1] provided by family members and time

| Members (T1n, T2n)	Time 1 X (SD)	Time 2 X (SD)
Spouse/partner (13, 13)	17.4 (6.6)	19.5 (5.9)
Mother-in-law (5, 6)	17.8 (5.3)	19.0 (5.9)
Father-in-law (0, 1)	---	12.0 (---)
Mother (14, 12)	17.4 (7.9)	17.9 (5.2)
Father (6, 7)	14.3 (8.1)	19.0 (5.1)
Sister (24, 22)	17.3 (6.3)	16.7 (4.5)
Brother (17, 19)	18.1 (5.9)	19.6 (3.2)
Grandmother (4, 2)	18.5 (4.8)	23.0 (0)
Aunt (4, 5)	17.3 (4.9)	20.0 (3.6)
Daughter (16, 15)	18.6 (5.0)	17.3 (4.7)
Son (6, 11)	19.0 (4.0)	15.8 (1.9)
Other Family (22, 25)	17.2 (4.2)	19.6 (4.6)
Combined average family functional support for mother through other family (113, 118)	**17.9 (4.2)**	**18.2 (3.6)**

---

[1]

Functional support is a combined average for tangible aid and emotional support. Scores range from no functional support (0) to high functional support (24).
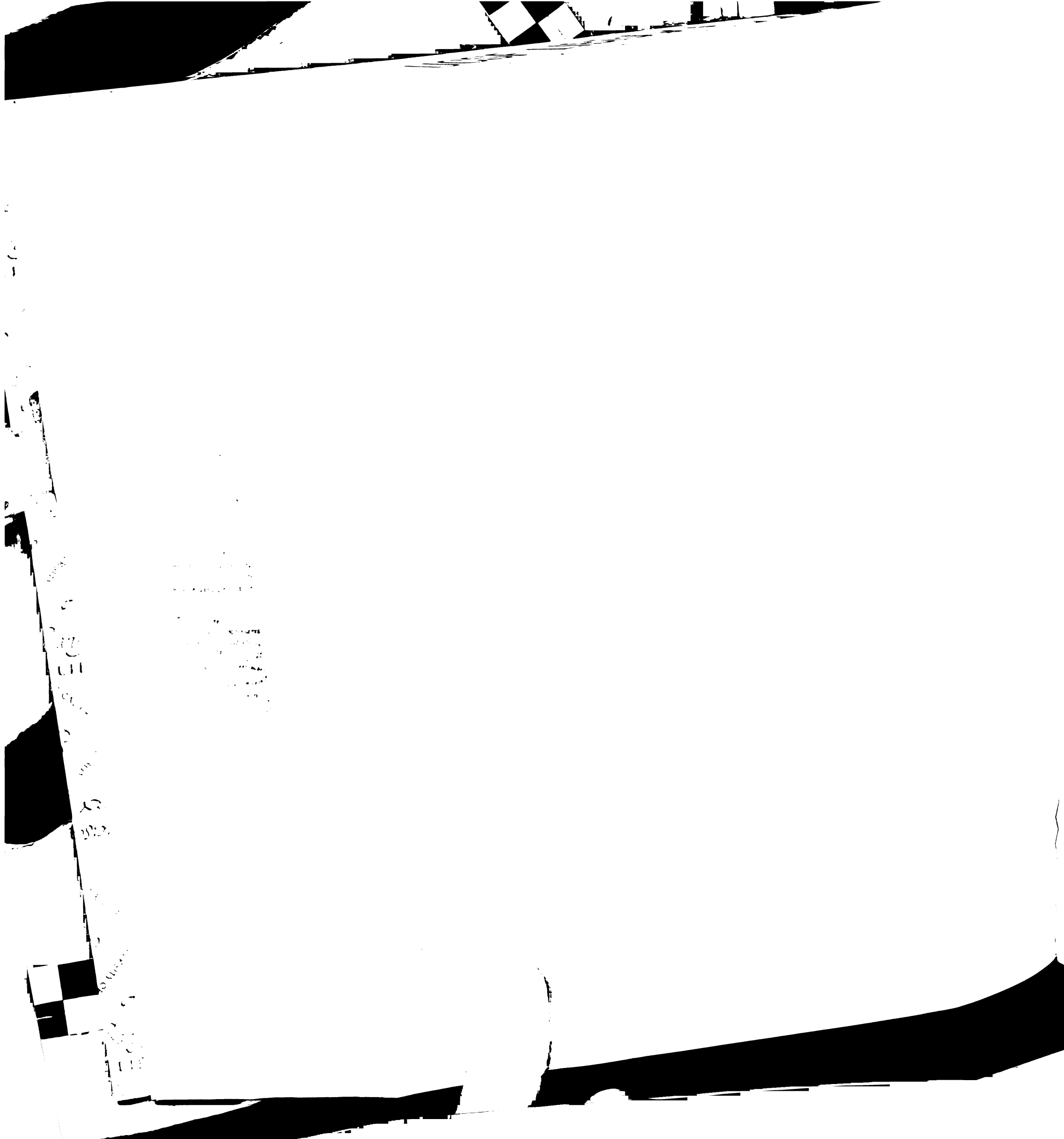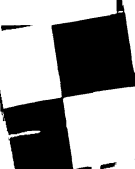
Table 27.

Average functional support[1] provided by non-family members and time

Members[2] (T1n, T2n)	Time 1 X (SD)	Time 2 X (SD)
Friends (57, 51)	17.2 (4.7)	·19.5 (3.6)
Neighbors (3, 0)	16.3 (4.9)	---
Health care providers (5, 6)	13.0 (3.6)	17.1 (3.5)
Counselors/therapists (23, 25)	17.7 (5.1)	18.9 (4.2)
Spiritual leaders (6, 6)	19.9 (4.1)	19.5 (3.5)
Other (3, 5)	16.3 (3.2)	16.0 (6.3)

---

[1]

Functional support is a combined average for tangible aid and emotional support. Scores range from no functional support (0) to high functional support (24).

[2]

Total non-family network members at T1 = 97; at T2 = 93.
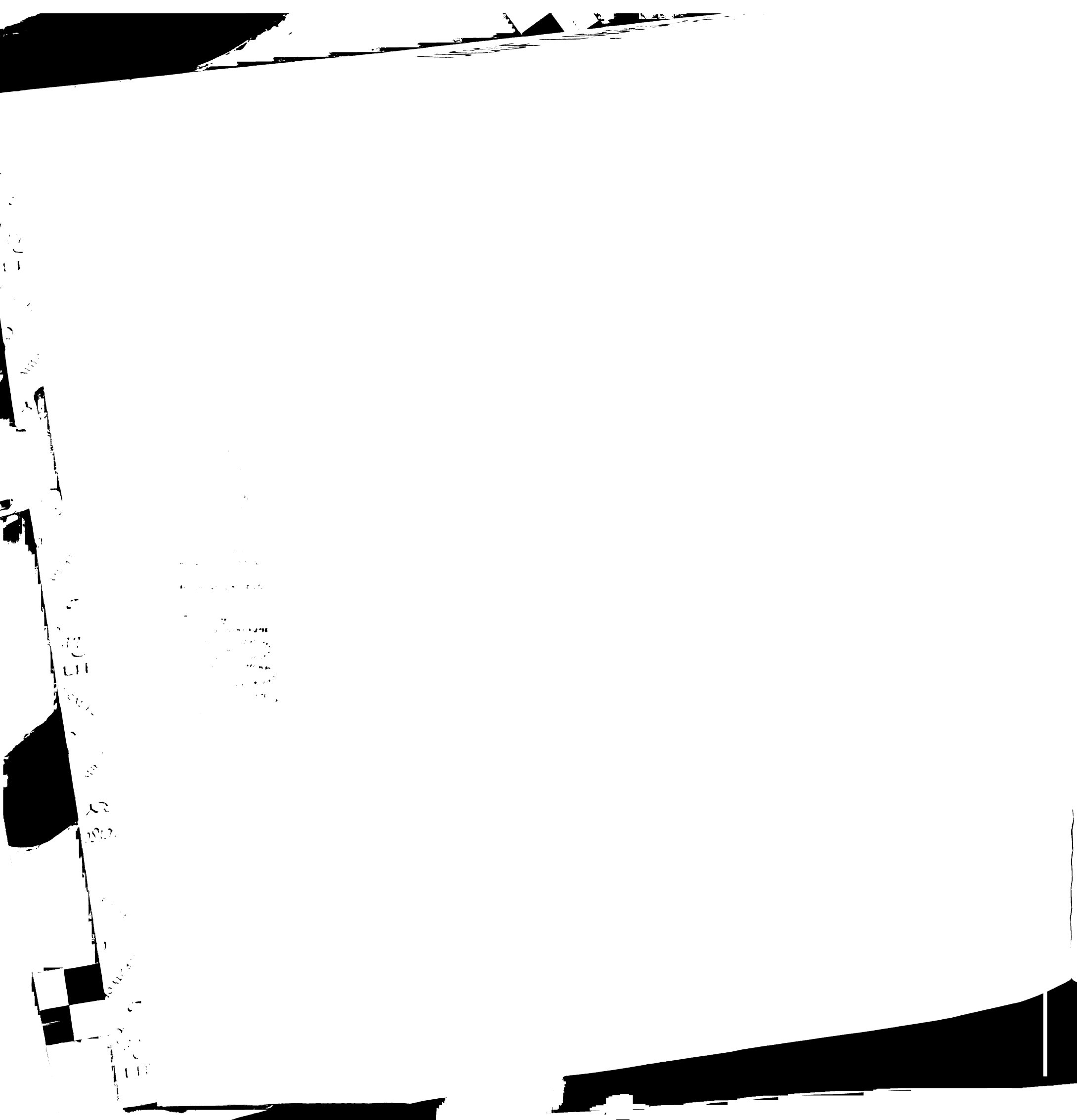
Table 28.

Functional Support by Network Members and Time (%)

| Network Members	Time 1 (n = 29) %	Time 2 (n = 27) %
Spouse/partner	7.0%	7.5%
Mother-in-law	2.3%	3.0%
Father-in-law	---	1.2%
Partner/family	**9.4%**	**11.7%**
Mother	12.1%	5.9%
Father	1.6%	2.9%
Sister	8.3%	5.4%
Brother	6.1%	6.5%
Grandmother	2.1%	1.0%
Aunt	2.1%	1.5%
Daughter	9.5%	7.5%
Son	3.2%	4.7%
Other family	8.3%	6.4%
Combined biological family	**53.7%**	**41.7%**
Friends	23.3%	28.2%
Neighbors	0.7%	---
Health care providers	0.9%	2.4%
Counselors/therapists	7.4%	9.8%
Spiritual leaders	1.5%	1.8%
Other	0.9%	2.0%
Non-family	**34.7%**	**44.3%**

Figure 1.
Modified Life Convoy Model

Social Environment Factors (Box)
• physical
• political
• cultural
• economic
The box can expand and constrict
depending on the influences of the
social environment factors.

The Person (Center Black Sphere)
Contains personal resources and demand
which will affect the perception of
support.
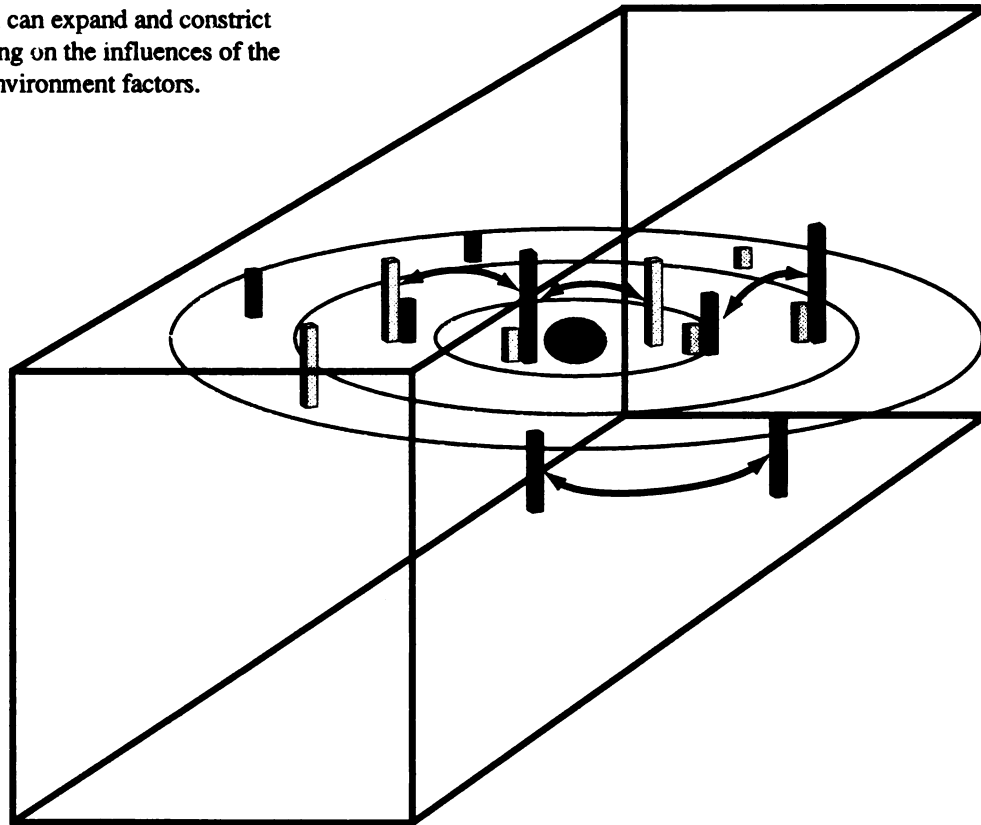
Social Network or Convoy
(Cocentric Circles)
• structure
• density
The cocentric circles can expand and
contract as the network changes.
The small rectangles represent individuals
in the network. The rectangle placement
in relationship to the person represents the
strength of the relationship.
↔: interactions between network members

Social Support
• tangible aid (the black boxes)
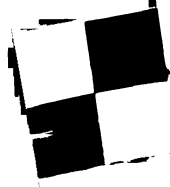• emotional support (the white boxes)
The height of the boxes represent the
amount of each type of support each
individual gives. Conjoined rectangles
indicate an individual who contributes
both types of support. The height or
existence of the boxes can change.

TIME CHANGES THE PICTURE!

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