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SOCIAL CONDITIONS AND THE LINK TO HEALTH: VIOLENCE, DISCRIMINATION, AND HIV RISK BEHAVIOR AMONG HOMELESS WOMEN

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DISSERTATION

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Dedication

I am interested in the history of public health terminology,

like “skid row alcoholic” which is used in the title of a paper I referenced in this

dissertation, and was also used to describe my father.

Bobbie Dean Dawson (1941-1983)

Dad, I dedicate this work to your memory.

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SOCIAL CONDITIONS AND THE LINK TO HEALTH: VIOLENCE, DISCRIMINATION, AND HIV RISK BEHAVIOR AMONG HOMELESS WOMEN

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This cross-sectional study examined the relationship between the social environment and homeless women's behavioral risk for HIV infection (N=105). More specifically, this study assessed the relationship between a passive response to unfair treatment, discrimination, and violence to HIV risk behavior in a sample of sheltered homeless women. Unfair treatment and discrimination were assessed with a measure that was adapted from a previously published measure (developed by N. Krieger and Kaiser Family Health Foundation). Violence was defined as physical harm by a family member, family friend, stranger, or partner, and the age of first harm. HIV risk was defined as sex without a condom with a male partner in the last 12 months, and any lifetime regular injection drug use or crack/cocaine use.

The women in this study were older (41 years mean age) and reported a mean of 2.76 years homeless. Sixty-two percent of the women reported being sexually active within the last 12 months. Four percent reported always using condoms or barriers with male or female main partners, while 59% reported always using condoms with a casual male partner. Thirty-five percent reported any lifetime regular use of crack/cocaine and 18% reported any lifetime regular use of injection drugs. Over two-thirds of the sample (84%) reported experiencing violence. Violence was consistently associated with HIV risk behavior, however, the associations were not statistically significant. Further, respondents reported experiencing discrimination when accessing medical care, getting tested for HIV, and getting testing and treatment for STDs.

Results indicate that risk for HIV behavior among this sample of women is high. Additionally, history of violence, unfair treatment, and the experience of discrimination were frequently reported among this group of women. The development of risk reduction interventions for homeless women must consider the context of risk and the social condition's that may contribute to behavioral risk for HIV infection. Moreover, the social condition, and not merely an individual's behavior, may be an appropriate place for an intervention to reduce HIV risk among homeless women.

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CHAPTER 1

THE STUDY PROBLEM

Introduction

The epidemiology of Human Immunodeficiency Virus (HIV) infection and Acquired Immune Deficiency Syndrome (AIDS) suggests a disparity between the groups of people who become infected. Among women, those of color and those living in poverty are disproportionately HIV-infected and continue to be at an increased risk for continuing infection (CDC, 1999). The disproportionate rates of HIV infection and an increasing death rate due to AIDS among these women are not surprising. Similar to many other illnesses, HIV infection is becoming more concentrated among racial and ethnic groups other than Caucasians, women, and those who live at the lower end of the socioeconomic scale. This tendency is an ongoing one that finds excess morbidity and mortality among the poor and racially oppressed (Williams, 1997; Zierler & Krieger, 1997).

The study of women and their risk for HIV infection is multidimensional and complex. Nonetheless, much of the research on HIV risk and women has been based upon biomedical (Zierler & Krieger, 1997; Fee & Krieger, 1993; Lock & Gordon, 1988; Tesh, 1988), lifestyle (Coreil, Levin & Jaco, 1985; Terris, 1980; Tesh, 1988), and psychological (Ajzen & Fishbein, 1980; Bandura, 1977; Prochaska, DiClemente & Norcross, 1992; Rosenstock, Strecher & Becker, 1988) views of disease causation. This focus persists, despite the epidemiology of HIV infection in women which inextricably links social and economic relations of race, class, gender, and sexuality to risk behavior (Zierler & Krieger, 1997).

These relations are at the crux of why particular women are at risk for HIV infection and why, once infected, they may have poorer health outcomes relative to white men who are HIV infected. Social conditions and inequalities that may be associated with risk for infection include homelessness, violence and discrimination. In order to slow the spread of HIV infection, social conditions and their association with HIV risk behavior should be a primary area of interest for clinicians and policy makers concerned with understanding the complexities of HIV risk behavior and committed to decreasing the rate of infection among women.

Statement of the Problem

HIV disproportionately affects African American and Latina women. Of 109,311 cumulative AIDS cases reported among adult and adolescent women at the end of 1998, 56 percent were African American, 20 percent Latina, and 22 percent white (CDC, 1999). This is notable as African Americans comprise 12 percent of the US population, Latinos 11 percent and whites 75 percent (CDC, 1995). As of 1994, HIV became the major cause of death among African American women between the ages of 25 and 44, and the rate of death (more than 50 per 100,000) in this group surpassed that of white men in the same age group (CDC, 1995). In addition to the increase in rates of HIV along race and ethnic lines, the numbers of HIV infection among women living in poverty continues to increase.

Perhaps at the lowest end of the socioeconomic scale are the homeless. Homeless women in particular are known to be at high risk for HIV infection. In a study of homeless adults (Zolopa et al 1994) found HIV seroprevalence rates ten times higher in their sample than in a comparison group of adults who were not homeless. In San Francisco, it is estimated that between three and four percent of homeless women are HIV-infected (Robertson, Tulsky, Bangsberg, Charlebois, Chesney & Moss, 1998).

Seroprevalence studies document who is infected and the behaviors that may put them at risk. The literature suggests why the number of poor women and women of color represent more new infections when compared to white women and women with higher social and economic status. These suggestions are based on behavioral hypotheses such as presumed higher levels of drug use and unsafe sex among particular populations. However, the literature does not present data to substantiate these claims. For example, studies which have examined HIV risk behaviors among women by racial categories found no significant difference in the behaviors, sexual risk and injection drug use in different racial groups of women (Gomez, 1999). The complexities of HIV risk behavior among the women who are most at risk, those of color and those living in poverty, can not solely be addressed by focusing on behavior but must be looked at in addition to the social conditions of women's lives.

Few studies have focused on the link between social conditions and HIV behavioral risk. However, research in this area has revealed found a connection between violence in the lives of women and HIV risk behaviors. A number of studies have documented how past and present experiences with violence can increase a woman's risk for HIV (Chavkin, Paone, Friedmann & Willits, 1993;

Zierler, 1997; Zierler, Feingold, Laufer, Velentgas, Kantrowitz-Gordon & Mayer, 1991). These studies have found that sexual violence, as a child or adult, and domestic violence are associated with HIV risk behavior in women. Despite the unequal distribution of HIV rates, little research has been conducted which examines the link between unfair treatment because of gender (including sexual and domestic violence), race, and socioeconomic status with HIV risk behavior.

Purpose of the Study

The primary aim of this study was to examine the relationship between measures of the social environment and behavioral risk for HIV infection in a sample of homeless women. More specifically, this study tested the association between: the perception of unfair treatment and a history of violence with behaviors known to increase the risk of HIV infection among a sample of homeless women. The specific objectives of this study were:

1. To describe HIV risk behavior (sexual behavior and drug use), history of violence, and perception of unfair treatment in this sample.
2. To examine the relationship between the two main variables of interest, perceived unfair treatment and a history of violence and the outcome, HIV risk behavior.
3. To explore the variables which correlate with the outcome variable HIV risk behavior, and the inter-relationships among these correlates, and the variables of interest, violence and perceived unfair treatment.

Significance

More than 600,000 cumulative cases of AIDS, among adults and adolescents were reported in the United States through December 1998. (CDC, 1999). Of these, 109,311 were women. The proportion of women with AIDS in the U.S. continues to increase. In 1984, women accounted for 6% of AIDS cases, in 1997 they accounted for 16% of the total AIDS cases reported by the CDC. In the ten years from 1984 to 1994, HIV infection became the third leading cause of death among all U.S. women aged 25 to 44. For African American women in this age group, HIV is the leading cause of death, and African American women's death rate is nine times that of white women (CDC, 1999).

Moreover, while the overall number of AIDS deaths has decreased overall, AIDS deaths among women have increased (CDC, 1997). In 1996, for the first time since the beginning of the epidemic, the death rate from AIDS declined by 19 percent (CDC, 1997). However, this decrease did not extend equally to everyone, the death rate from AIDS in women decreased seven percent compared to a 22 percent decrease in men. During this same period, among whites the death rate dropped 28 percent, for African Americans the decrease was ten percent, and for Latinos the decrease was 16 percent (CDC, 1997).

Known Risk Factors for HIV

The CDC surveillance reports suggest that heterosexual contact and injection-drug use play equally large roles in a woman's risk of HIV infection. Of the approximately 109,000 reported AIDS cases among adult and adolescent women in 1998, 39% were attributed to heterosexual contact, 43% were attributed to injection drug use, 3% were the result of receipt of blood or blood products, and 14% of cases cite the risk factor as unknown or unreported. Among reported cases of HIV infection, the trends are a bit different when compared to AIDS cases. Twenty-two percent of women are reported as injection drug users, 40% report heterosexual contact as their risk and 37% are categorized as risk not reported or identified. These cases do not represent the total number of new HIV infections and are reported from 30 areas with confidential HIV infection reporting. Nonetheless, the trend is notable because the number of cases of HIV infection attributed to no known or reported risk is increasing. Unexplained risk factors as potential independent factors must be investigated in order to more fully explain women's HIV risk.

Other Risk Factors for HIV

Economic necessity, male and female gender dynamics, and violence against women are not considered risk factors for HIV infection; however, some of these social conditions may be a fundamental etiology of HIV infection in women. Studies which have attempted to link economic, gender and racial inequalities with HIV are limited (Zierler & Krieger, 1997), however, this area of research may be significant in understanding HIV risk among women. Although few studies have measured how racial and gender discrimination may affect women's risk of HIV infection, the effects of racism on health have begun to be measured and demonstrated in relation to elevated blood pressure (Krieger &

Sydney, 1996; Williams, 1997) and impaired mental health (Cochran & Mays, 1994; Dressler, 1993; Thomas & Quinn, 1991).

In addition, HIV-positive women and women at a high risk for HIV infection have experienced persistent, and deepening forms of economic and social inequality (Zierler, 1997). Women's response and resistance to social and economic subordination include behavioral strategies such as drug use, violence, social disintegration, and sexual risk (Connors, 1996; Stevens, 1995; Zierler & Krieger, 1997). The use of drugs (either a woman's own use or her sexual partner's use) is a predominant link to HIV infection in women. In some urban areas where drug use is endemic, women injection drug users are becoming infected twice as fast as men who inject drugs (CDC, 1996).

Poverty, which is an indicator of HIV infection in women (Farmer, 1998; Brown, Melchior, Reback, & Huba, 1994) may also be viewed as an HIV risk factor for women. Poverty in the literature on health is primarily used as a static category, used to describe persons with health problems; however, the interrelationship between poverty and gender inequalities, and poverty and racial inequalities, may be among the reasons why the most rapid spread of HIV is among women. Social forces, large scale and small scale -economic, political, and cultural factors- are placing millions of women at increased risk for HIV infection (Farmer, Connors, & Simmons, 1996).

Social inequality and HIV risk behavior is an important and relevant area of study. We have the knowledge of what behaviors put women at risk for HIV infection. However, the social conditions, which affect these behaviors, are not as well known. For greater understanding, the study of HIV risk behavior among women must be placed within a social context, which extends beyond behavior. Moreover, researchers must emphasize the development of valid measures of social conditions and study the impact of these conditions on HIV risk behavior among women.

This study is intended to measure the perception of unfair treatment, the experience of discrimination in various social situations, and the experience of violence, using a theoretical construct which posits that the social environment is a fundamental cause of illness, in this case HIV infection. In addition to measuring social conditions, this study sought to understand the relationship between violence, the perception of unfair treatment and risk behavior for HIV acquisition. Finally, this dissertation will contrast the hypotheses of the social environmental links to disease causation with that of the environmental concept in nursing theory.

Knowledge of unfair treatment and violence may help identify women at risk, and more specifically help clinicians ask better questions of women who are seen in clinical situations. Perceived discrimination when accessing medical care, testing and counseling for HIV and testing and/or treatment for STD's could impact clinical care through provider education. And ultimately this may help us reshape health care to insure equal access and improve health outcomes among women.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

A model that places the fundamental etiology of illness within the social environment context was used to guide both the data collection and interpretation of these study results. This framework is drawn from the work of several authors who discuss the literature of race, class, and gender inequalities as factors that affect the health of the individual and the community (Frank, 1995; Lillie-Blanton & Laveist, 1996; Evans, Barer, & Marmor, 1994; Link & Phelan, 1995). This framework concerns the social production of disease and recognizes the social environment and inequality as a fundamental cause of illness. And for that reason, it was used in this study to reframe HIV infection in women as a function of the social environment and encompasses the majority of the variables of interest. This chapter reviews the literature on the social environment and HIV risk. Because the sample for this study was comprised of homeless women, the literature on homeless women and health is also discussed. In addition, the conceptualization of other variables that are potential correlates of violence, unfair treatment, and perceived discrimination are considered here. And, finally, the hypotheses of the social environment as a fundamental cause of HIV infection in women is discussed in relation to the theoretical concept of the environment in nursing theory.

Social Environment as a Determinant of Health

The social environment is defined broadly as social conditions that occur in society. Social environment can be viewed as macro level social and economic indicators and cultural factors or as micro-level factors in the immediate environment of the individual (Frank, 1995). Researchers have generally identified social environment as those social conditions that influence health, including education, occupation, and family income (Lillie-Blanton & Laveist, 1996). The social environment has also been defined in terms of socioeconomic factors, (e.g. employment and education) physical surroundings (e.g. neighborhood and work conditions), social relations (e.g. community or workplace relationships, and social support) and power arrangements (e.g. political empowerment, individual and community control and influence) (Evans, Barer, & Marmor, 1994). Social environment also takes into account the context of the particular group under study and, depending on the population, includes discrimination or privilege (Lillie-Blanton & Laveist, 1996).

A review of the evidence that relates social conditions and illness has included several aspects of the social environment. The conditions that have been studied include intimate relationships, race, socioeconomic status, gender, stressful life events, neighborhood characteristics and social support. Some of the strongest work linking social conditions to disease has been in the area of socioeconomic status and health. Lower socioeconomic status has been associated with shorter life expectancy and higher overall mortality rates (House, Landis & Umberson, 1988; Adler, Boyce, Chesney, Cohen, Folkman, Kahn, & Syme, 1994; Syme & Guralnik, 1987) and higher rates of infant mortality (Pappas, Queen, Hadden, & Fisher, 1993; Adler, Boyce, Chesney, Cohen, Folkman, Kahn, & Syme, 1994). Socioeconomic status has also been associated with the major causes of death listed in the International Classification of Diseases (Illsley & Mullen, 1985) as well as several other health outcomes including mental illness (Dohrenwend, Dohrenwend, Gould, Link, Neugebauer &Wunsch-Hitzig, 1980). This evidence has clearly established a strong and persistent relationship between social conditions and disease.

In the study of the social environment the tendency has been to categorize dynamic and multi-faceted social situations into a variable that is static and collected at a single point in time, such as the combination of race, gender, and social class (Berkman & Syme, 1990; Lillie-Blanton & Laveist, 1996). Despite their shortcomings, these measures, which are crude and generally collected at a single point in time, remain strong predictors for health and illness across a number of diseases. Nonetheless these variables, which are seen as proxies for the social environment, are usually linked to a single disease outcome, which does not always aid in clarifying our understanding of the dynamic process of social factors and their influence on health. Generally, there are two characterizations in the study of social conditions as causes of disease (Link & Phelan, 1995). One of these is that social conditions are only proxies for the real cause of disease and the other is that social factors only point us to the real risks for disease (Link & Phelan, 1995). These views of social conditions and etiology of illness are problematic in that they do not allow for the exploration of the social environment itself as a fundamental cause of illness.

Both health and illness are a function of multiple interrelated factors, which include biological factors, social factors, life style behaviors, health care, and the use of health services (Cassel, 1976; Lillie-Blanton & Laviest, 1996). Nonetheless, the vast amount of money being spent in this area is on health care, which persists despite the well recognized fact that many of the advances in health during this century were a result of improvements in economic and material conditions (Frank, 1995) and not as the result of health care. Economic resources funneled into health care reflect a belief that the availability and use of health care services is central to the health of populations and individuals (Evans & Stoddart, 1994; Evans, Barer, & Marmor, 1994). Evans & Stoddart (1994) further contend that this focus on care extends to national policies about health, which are focused on health care policies not on policies aimed at increasing health as defined by the World Health Organization (WHO). In particular, this focus is contrary to the WHO definitions of health that is neither reactive nor focused specifically on health care but on all factors that contribute to health. Research on social environment as a cause of illness is important to conduct.

Link and Phelan: Social Conditions as a Fundamental Cause of Illness

Link and Phelan's (1996) thesis constructs the social environment as the important determinant of health and illness, and defines social conditions as a fundamental determinant of illness. These authors identify social factors as more distal to the cause of disease when compared with more proximate causes such as cholesterol, smoking, and a sedentary lifestyle (Link & Phelan, 1995). Link and Phelan (1995) use the term social condition, which they define as:

> "Factors that involve a person's relationships to other people. These include everything from relationships with intimates to positions occupied within the social and economic structures of society. Thus, in addition to factors like race, socioeconomic status, and gender, we include stressful life events of a social nature, (e.g., the death of a loved one, loss of a job, or crime victimization), as well as stress-process variables such as social support." (p.81)

Link and Phelan (1995) and Becker (1993) argue that the attention on proximate causes and risks for illness which are potentially controllable, and focused on individual level factors, is directly related to the ideology of Western culture which sees the individual as capable and responsible for controlling their personal health. Moreover, Link and Phelan (1995) see an affinity between Western cultural beliefs and current research methods which centers research on the individual, proximate risk factors of disease and away from the social environment as a determinant of health (Link & Phelan, 1995).

This focus on the individual as responsible for his or her health and on proximate risk factors has resulted in considering AIDS as solely a biological disorder (Fee & Krieger, 1993), with prevention interventions focused almost exclusively on changing individual behavior, while excluding any analysis of the context surrounding the behavior. Link and Phelan's thesis is useful for this study because their work lends credence to the idea that HIV infection can not be understood or altered without understanding its social context.

Having said that, the definition that Link and Phelan use to define social conditions is narrow and neglects aspects of the environment that may be important health determinants. Their definition of social conditions as relationships, ranging from intimate encounters to relationships with others in positions occupied within the social and economic structures of society, is narrow in its meaning. One area that falls under the rubric of social conditions and which is not delineated in Link and Phelan's work is the development of policies. Political decisions concerning health care delivery as well as the legislation of behavior are both aspects of the social condition of women at risk for HIV. Although there are few studies in the literature which examine the connection between policy development and health, this is an important area to consider and an aspect of the social condition that would benefit from further study, particularly in the area of HIV risk for women. Specifically, two policies, which may be important aspects of women's social condition, are welfare reform and the criminalization of unprotected sex involving HIV-positive people. Although there is little documentation, (WAN, 1998) the impact of these two policies on women's behavior, among those at risk for HIV and those already infected may be at cross purposes with HIV prevention efforts. Even though Link and Phelan allude to the macro level social conditions, their operationalization of the concept does not go far enough by discussing policies and their potential relationship to illness. Nonetheless, their thesis provides a framework not only for further study, but also as a means to critique the discourse of other disciplines whose study includes health and the environment.

Link and Phelan's (1995) conceptualization of the social environment as a determinant of health is important to our understanding of the environmental domain in nursing, for several reasons. First, Link and Phelan (1995) consider research that has examined the role of the social environment as a determinant of health and highlight the theoretical pitfalls that reinforce attention on individual, proximate causes of disease. Second, they introduce two conceptual ideas which take into account dynamic social processes which may facilitate an understanding, through research, of how the social environment affects health, these include conceptualizing risk factors and social conditions as a fundamental cause of disease (Link & Phelan, 1995). Third, their principle of conceptualizing risk factors may be operationalized to include the study of concepts such as discrimination and violence and their relation to specific behavioral risks among a group of women, in this case homeless women. Additionally, the study of these ideas may further elucidate the construct of environment in nursing and may aid in providing a method for operationalizing the social environment in order to better measure, assess and intervene in the delivery of nursing care.

Concept of the Environment in Nursing

The literature described above outlines some of the different factors in the social environment of women at risk for, or infected with HIV. Gender, class, and racial/ethnic discrimination, stress, and lack of affordable housing are contextual situations that nurses encounter on a regular basis in their provision of nursing therapeutics. In order to fully understand the construct of the environment and its linkages to other nursing constructs, nursing must consider both the physical and social environmental contexts in theory development, practice and research settings.

The construct of the environment has been central to the domain of nursing science since the early work of Florence Nightingale (Nightingale, 1969; Meleis, 1986; Chinn & Jacobs, 1983; Kim, 1983; Newman, 1983). At the center of Nightingale's early work was her aim to optimize the environment to promote health. Nightingale (1969) witnessed the discomfort and suffering of people as a result of the inadequacies in their surroundings. This understanding led her to define the environment as one of the domains of nursing work (Meleis, 1991; Chinn & Jacobs, 1983). Nightingale's definition of environment did not distinguish the physical and social environment from one another, rather she wrote about improving the environment to aid healing (Nightingale, 1969). This central role of the environment in nursing shifted when nurse theorists (Henderson, 1966; Orem, 1971) became more interested in biological systems, and the study of human responses to illness. At this time nurse theorists became ideologically aligned with the biomedical paradigm as a source for nursing knowledge. Person, health, and nursing therapeutics became the dominant areas of study in nursing (Orem, 1971); and nursing began to concentrate on the response to illness and the role of the nurse (Orlando, 1961, King, 1968, Paterson and Zderad, 1976).

Despite the fact that the environment has remained as one of four domains in nursing, it has not been written about or studied with the same conviction since the early days of Florence Nightingale. The environment has not received as much attention as the individual or illness has received in nursing science (Kim, 1983; Chinn & Jacobs; 1983; Meleis, 1991). The primary focus of nursing science has been on the individual, his or her adaptation to the environment and nursing role in this, rather than the environment as a focus and the role of nursing in altering the environment in order to influence the nature of health and illness.

When environment is examined in nursing research, it is the physical dimension of the environment that is the focus of study (Chinn & Jacob, 1983). Historically, research on the physical environment has involved the study of either the nurse's or the patient's environment (Chinn & Jacob, 1983). Research on the nurses' environment has largely focused on the physical environment where nursing practice takes place and has generally examined nurses' perspectives on such topics as organizational behavior, staffing, or stress and coping mechanisms of nurses working in a particular health care setting (Kim, 1983). Research on the physical environment of the individual client has included such areas as sensory overload in the intensive care unit or the effect of a schizophrenic sibling on family coping. Kim (1983) suggested that one reason for the paucity of research on the environment in nursing is due to the fact that the construct has not been well defined and operationalized for research purposes.

In recent decades, nursing theorists have begun to reconsider the environment as a central construct in nursing and focused their attention on the interaction between the human being and the environment (Rogers, 1970; Paterson & Zderad, 1976). For example, Rogers (1970) and Paterson and Zderad (1976), have examined the family, energy fields, patient rooms, nurses, society, cultures, social systems, and other phenomena which naturally occur in the individual's environment. Rogers (1970) specifically identifies the environment and person as interrelated and inseparable. Nursing theorists who consider the environment as a central construct identify the role of the nurse as promoting, maintaining, or regulating the life processes of the individual in order to effect changes in the environment and or the individual (Rogers, 1970; Paterson and Zderad, 1976). For example, Paterson and Zderad (1976) define nursing as a human discipline that involves one human being helping another and see the role of the interaction of the nurse and patient as promoting healing. They emphasize the importance of the environment and discuss its manifestation in other humans and relationships, however, the crux of their theories lies in the interactions between the nurse and patient. While these theorists have acknowledged the importance of the environment in health and healing, they have not focused on the environment specifically. The focus of these theories has been on the individual interactions with and responses to the physical environment. This work which has been important to the development of nursing knowledge has not provided significant insight in the study of the environment.

Research on and theoretical definitions of the environment which have incorporated individual responses to external environmental cues and/or a physical description of one's immediate surroundings is limited as these works fail to take into account complex social environmental influences (Chopoorian, 1986). Paterson and Zderad (1976), and Rogers (1970) define social environment in relation to the individual's ability to adapt, cope, or maintain health within an environment where inequalities and discrimination exist. For example, nurses practicing in the community may identify that women's potential for HIV infection is not recognized and that HIV in women is underreported (Schoenbaum & Webber, 1993). Practice from a theoretical foundation that promotes interaction and adaptation imposes a practice of caring that centers on support of the individual HIV-infected woman. Practice, which operates from such a theoretical foundation, does not take into account the social conditions that may put a woman at high risk for HIV-infection and may result in delays in virus detection and treatment. Theoretical foundations that do not include interventions in the form of public policy will not necessarily insure that health care providers acknowledge that women who engage in unsafe sexual practices are at risk for HIV infection. Although it is clear that nurses do have an important role in supporting and providing care for the infected women, the social environment of women needs to be considered so that public policies are enacted which may alter the manner in which women are perceived and treated when they see a health care provider.

Not recognizing social environmental factors, such as inequality and discrimination, restricts the definition of the environment and places the responsibility of maintaining or promoting health, in an adverse environment, on the individual. This conceptualization of the environment as the interaction with the immediate physical environment limits the scope of practice and inhibits interventions, which consider the social environment as a place for change, adaptation, and nursing intervention. Such a limited conceptualization of the environment does not foster the role of nursing in advocating for policy changes in the institutions where nurses practice or at the legislative level. Moreover, this conceptualization of the social environment focuses on the individual and does not consider social conditions as a focus of nursing interventions.

Despite the paucity of study on the social environment within the discipline of nursing, this concept remains a critical area for the development of nursing knowledge because nurses practicing and conducting research in the community need a relevant and clearly defined concept of social environment. Without a theoretical basis for the social environment, nursing practice and research may remain restricted and reactive to important social problems such as gender, class, and racial/ethnic discrimination. Furthermore, nursing, which has traditionally examined microscopic level processes at the level of the individual has not identified the social environment as a purview of nursing.

Contemporary work has begun to focus on the need to "reconceptualize" the social environment in nursing (Chopoorian, 1986). Chopoorian (1986) identifies nurses as intimately involved with the social environment of the clients with whom they work regardless of the setting. She claims that despite the intimate nature of the nurse-client relationship, nurses have neglected to get involved with the social environment of their client(s) and have limited their care/interventions by focusing on the individual. In her aim to expand the definition of social environment, Chopoorian (1986) challenges nursing to extend caregiving and nursing interventions beyond the individual to the social environment.

Chopoorian (1986) uses the example of the tobacco industry to develop her ideas of how nurses could revise the concept of social environment. By conducting an economic, political and social analysis of these relationships, Chopoorian (1986) explains how nurses could work as political activists. Nurses, she claims, who are aware of the discrepancies between the efforts to reduce smoking and the government support for this industry could provide a voice in revealing the social, political, and economic forces at work within the context of the social environment (Chopoorian, 1986).

Chopoorian's discussion of the social environment emanates from a critical social theoretical perspective. Critical social theory was developed by a group of scholars who were working together at the Frankfurt school in the 1920's and 1930's (Horkheimer, 1995). The basic belief behind this theoretical viewpoint is that social phenomena can not be understood in isolation from a historical and societal context (Horkheimer, 1995). Another nursing scholar, Stevens (1989) uses Chopoorian's concept of the social environment to advocate for the nursing process to include uncovering the inconsistencies of social, political, and economic conditions that work to oppress people. Chopoorian (1986) and Stevens (1989) both place the goal of nursing, within a larger social context, as social change through uncovering conditions of inequality and by having visions and the willingness to dialogue' with clients about conditions that are unjust, and to challenge the status quo.

Using critical social theory, Chopoorian reconceptualized the concept of social environment for nursing and proposed the following assumptions. First, nurses have the ability and a unique opportunity to work for social change. Second, nursing frameworks have utilized the notions of accommodation, assimilation and adjustment, and the sole adherence to these frameworks fails to address nursing practice in the community. Third, using a theory of coping with an environment that both oppresses and marginalizes people is not holistic nursing care. Fourth, poverty and violence can not be adapted to, and nursing should not support this notion in its concept of the environment. And finally, that economic, sociopolitical and historical forces shape the conditions in the environment (Chopoorian, 1986).

Chopoorian's concept of the social environment provides a broader definition of the social environment for nursing. This definition of the social environment is applicable in communities where inequality exists and is community based. Her method of deconstruction of the sociopolitical, economic and historical environment provides the nursing profession with the tools to analyze the social environment in which nursing care is delivered. Chopoorian's reconceptualization of the social environment is an important contribution toward the development of nursing knowledge, however, certain aspects of the social environment are missing in her analysis. Both Chopoorian and Stevens analyze the sociopolitical environment where etiology has already been defined, for example cigarette smoking and lung cancer. It is the opinion of this author that Chopoorian's and Stevens' view of the social environment fail to take into account aspects of the social environment, such as gender, racial/ethnic and class discrimination, which appear to be linked to health status. The prevention and treatment of certain health conditions, such as HIV infection in women, require research and interventions that are theoretically grounded in the social environment as a cause of illness (Lillie-Blanton & Laveist, 1996).

Link and Phelan's (1995) framework for contextualizing risk factors could be useful for understanding the social environment and how it relates to health. An increasing number of investigators have recognized that gender differences influence HIV risk behavior (Gomez & Marin, 1993; Grinstead, Kegeles, Binson, & Eversley, 1993; Kline, Kline & Oken, 1993), yet these studies are not based on theoretical models that provide an explanation for these differences (Amaro, 1995). A theoretical perspective, which brings social environmental context to the forefront, allows research to be conducted that will look more closely at the social context in the explanation of differences for both risk factors and outcomes related to HIV infection.

Contextualizing risk factors could aid in the understanding of nursing knowledge of the social environment. Nurses conducting research or practice from the perspective that reducing risk factors by focusing on behavioral change assumes that clients have a choice in reducing their risk factors. Taking into account the theoretical standpoint of the social environment through contextualizing risk factors clarifies the determinants of health, in this case risk factors, not as the responsibility of the individual but as a part of the environment where women subsist. Without considering the social environment, it is impossible to determine why some women become infected and others do not. (Farmer, 1996). Poverty, drug use and AIDS are factors that distance women from the dominant culture in this society, including nursing. An understanding of the social environment for nurses would compliment nursing therapeutics aimed at promoting health for individuals by enhancing the lives of women in a contextual community.

Concepts within the Social Environment

Another theoretical notion that is instrumental in understanding the domain of the social environment, and is particularly important in this study, is the definition of concepts that are used to measure social conditions. Williams, (1996) critiques the scientific literature on its use of the categories which are related to the social environment. The categories commonly used in research to equate social conditions are race/ethnicity, gender and socioeconomic status. Williams (1996) describes the use of these categories in science as problematic, and seldom defined in the context of the research being conducted. He argues that the category of race, which is primarily socially constructed, is often represented in the literature as a difference rooted in biological or genetic make-up. Although biological differences between people based on race and gender may exist, the definition that this study adheres to is that the categories of race and gender in medical research represent social categories and rarely are used to represent a genetic or biological difference. Likewise, socioeconomic status measured as income differs from the measurement of perception of poverty and poverty in the context of the social system. This may be particularly important when discussing the measurement of women's socioeconomic status, especially among women who are partnered with men and do not have an income.

Another approach to the understanding of social conditions is the study of one's experience of social, economic, and gender disadvantage. Studies which have approached the measurement of social conditions in this way have found interesting relationships between women of different races, their experience and response to unfair treatment and the health indicator of blood pressure (Krieger & Sydney, 1996). Perceptions, while not discussed outright in Link and Phelan's work are another aspect of social conditions that may have a significant relationship to health and illness and an area which needs further exploration as a concept and in relation to HIV infection. Perceptions of unfair treatment or inequality are based on the experience of an individual. However, the meaning of poverty and the perception of unfair treatment because of one's social class may differ between two objectively equal individuals. A different or possibly similar perception of one's treatment because of their race, gender, or socioeconomic status may tell us a lot, and help in the understanding of what Link and Phelan call contextualizing risk factors.

While specific disease patterns change, the social inequality gradient of who becomes ill or does more poorly once ill does not change much (Evans & Stoddart, 1994; Link & Phelan, 1995). Regardless of the disease, inequalities persist, therefore, a disease specific focus for increasing health is a less effective strategy than looking at the social environment determinants (Evans & Stoddart, 1994; Link & Phelan, 1995). HIV risk and women, as noted before, is an important health issue to consider in relation to social conditions and environment because HIV infection and AIDS are becoming increasingly linked to social disadvantage, especially among women. Further, the study of the environment and the link to HIV could add to the understanding of social conditions and their relationship to health and illness. In an effort to build the evidence that social conditions and environment of women at risk for HIV as a determinant of HIV infection is a significant area of study, the literature on HIV risk, and the social environment and HIV is discussed.

Traditional Risk Factors for HIV Infection among Women

Drug Use

The use of drugs is a predominant link to HIV infection in women. Given epidemiology of HIV, it can be said that the majority of new HIV infections among women are due to women's personal use of injection drugs or crack, or their sexual partner's use of drugs. Fifty-nine percent of women with AIDS have been exposed to HIV either from their own drug use or from having sex with an injection drug user (CDC, 1999). Women who are new to injection drug use--often very young women--are at particular risk of infection (Connors 1996).

Women are put at risk when they share their works (needles, syringes, and other drug paraphernalia) with other people who have HIV. Typically in a group of people who share needles, the women in the group are the last in line to use the needle and their position puts them at even greater risk of injecting themselves with the blood of someone who is already HIV-infected (Connors, 1996). Women may also rely on the social and emotional bonds that develop between people who use drug together (WAN, 1998). In addition, women have reported that they share needles and engage in sex as a trade for drugs in order to avoid arrest for possession (Connors, 1996). Some women also engage in prostitution in order to make money for survival and to buy drugs because the legal repercussions are minimal compared to alternative crimes such as robbery, or drug dealing (Leigh, 1988). Women who use drugs are also typically poorer than men who use drugs and are less likely to be able to afford to buy clean needles (Grund et al., 1996).

Drug use also puts women at risk of infection indirectly. An unknown yet probably large percentage of women with AIDS, possibly as many as 80% who reported their HIV risk as heterosexual sex, were infected by partners who were injection drug users whose injection use was unbeknownst to their women partners (CDC, 1996). Moreover, women who use drugs are likely to be sexually involved with men who also use, while male drug users are more likely to have non-using women as partners (Connors 1996). Women who are addicted to crack cocaine or other drugs are often forced to exchange sex for drugs and may voluntarily exchange sex for drugs in order to avoid arrests for more severely punishable offenses such as robbery (Tortu, Beardsley, & Deten, 1994; Ellerbrock, Bush, & Chamberland, 1995).

In addition to injection drug use, crack cocaine use has been identified as an HIV risk behavior. In the late 1980s when the sale and use of crack cocaine began to receive widespread media attention, medical providers and researchers were not concerned about potential contribution of crack use to the spread of HIV, primarily because crack was smoked and not injected (Logan, Leukefeld & Farabee, 1998). However, as reports of individuals who use crack having multiple sexual partners, and exchanging sex for drugs, money or housing altered this view, crack use began to be considered a risky behavior for contracting HIV (Ratner, 1993; Edlin et al. 1992; Logan, Leukefeld & Farabee, 1998).

Edlin et al (1992) in a multi-site study of 1104 women found that female crack smokers were six times as likely as nonusers to have had more than 20 sexual partners, 15 times more likely to sell sex, and four times as likely to have syphilis or other STDs. Findings from this study and others suggest that female crack smokers who have never injected drugs were twice as likely to have HIV as non crack smokers (Edlin et al., 1992; Inciardi, 1995). Edlin's (1992) results may not be generalizable to all women who smoke crack because of his sampling methodology which enrolled women who were recruited at criminal justice sites and drug treatment centers. Nonetheless, these findings link HIV infection to crack use.

Condom Use

In the simplest form, sexual risk for HIV infection involves unprotected sex with an HIV-infected partner. Condom use, which is the most effective method of HIV prevention among persons who are having sex (Weller, 1993), has been widely studied among women. Despite the benefit of protection from sexually transmitted disease, including HIV infection, the literature has documented a number of reasons why universal condom use, by women who are sexually involved with men, has not been achieved. These include: how condom use is defined, negotiating condom use, difficulty with HIV serostatus disclosure, the interrelationship between drug use and sex, cultural factors, gender norms, and male partners not wanting to use condoms.

Condom use rates in the general population, and how condom use is defined, varies across studies (Bedimo, Bennett, Kissinger, & Clark, 1998). Leigh, Temple, and Trocki (1993) found that less than 5% of women used condoms consistently in the prior year, and Catania et al. (1994) found that 11% of white women and 14% of African American women used condoms consistently in the prior year. In one study conducted at an HIV clinic, 26% of women used condoms more than 50% of the time (Weinstock, Lindan, Bolan, Kegeles, & Hearst, 1993). While in another study which sampled women from HIV clinics, 82% of women used condoms sometime during the prior 12 months (CDC, 1997).

In addition to describing condom use, several studies have documented reasons why consistent condom use has been problematic for women. Bedimo, Bennett, Kissinger, & Clark (1998) in their study of African American women found that most of their sample used condoms inconsistently or not at all. Despite having reported no difficulty with condom negotiation, most of their participants reported inconsistent condom use. HIV-positive women reported their uninfected partners unwilling to use condoms because of denial that HIV infection was a risk or because it was a way of expressing their love for their HIV-infected female partner (Bedimo, Bennett, Kissinger & Clark, 1998). Other studies among HIV negative women have found self-efficacy, condom negotiation skills, and condom availability related to condom use (Jemmott, Jemmott, & Fong, 1992; Holtgrave, Qualls, Curran, Valdiserri, Guinan, & Parra, 1995; DiClemente, Durbin, Siegel, Krasnovosky, Lazarus, & Comacho, 1992; Catania, Kegeles, & Coates, 1990).

This brief review is not meant as an exhaustive discussion of the literature on women's HIV risk. However, this discussion is provided as a way to comment on the theoretical foundation of the majority of HIV prevention studies. What many of these studies have in common is a behavioral focus for decreasing risk behavior. These efforts are centered almost exclusively on the self-report of condom use, and the use of clean injection equipment. Or, if not solely focused on behavior, the aim of these interventions tend to focus on increasing women's feelings of self-worth or empowerment, while measuring the effect on the individual by documenting condom use, and in some instances, clean needle use. The need for focus and study of behavior to decrease the rates of HIV infection is real, however, there are issues worth noting which highlight some of the problems with this narrow focus in the literature.

Critique of Traditional HIV Risk Literature

First, the use of behavioral self-report as the measure of condom use and injection practices may present problems due to the validity of self-report. Self-report as a measure for these concepts is widespread because of the sensitive and stigmatized nature of illicit drug use, and sexual behavior which is usually a private activity (Darke, 1998; Catania, Gibson, Chitwood, & Coates,1990). However, despite general use, concerns about the accuracy of these reports continue to be raised. The literature on illicit drug use reports considerable reliability and validity of self-reported behaviors when compared to biological markers and criminal records as measures of descriptions of drug use, drug-related problems and the natural history of drug use (Darke, 1988; Harrison, 1997). Nevertheless, the literature suggests that neither self-report nor biological marker as entirely accurate methods. While both procedures have problems with validity, they continue to be used in research on drug use (Harrison, 1997).

In the measurement of sexual behavior and condom use the literature exposes a number of methodological problems with self-report. These include self-selection bias and measurement error (Catania, Gibson, Chitwood, & Coates, 1990; Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998). Because sex is generally a private relationship some people may shy away from participating in studies where information about sexual behavior is collected, leaving people who are more apt to discuss sexual behavior as the majority of participants in these studies (Weinhardt, Forsyth, Carey, Jaworski & Durant, 1998). Moreover, people who participate in research on sexual behavior are categorized as under-reporters of sexual behavior especially when it may be considered inappropriate sexual behavior by others, or over-reporters as a means of bragging about sex (Catania, Gibson, Chitwood, & Coates, 1990).

The studies of condom use that were previously discussed suffer from some of the methodological issues discussed above. First, there is a wide range of how condo use was measured and categorized, for example Bedimo et al (1998) used the term consistent or inconsistent condom use, while CDC (1990) categorized condom use as sometimes, and Weinstock et al (1993) measured condom use in terms of percentage time used. Secondly, although a number of interventions based on behavioral theory have shown some success in changing behavior (Fisher & Fisher, 1992; Holtgrave et al., 1995, Valdiserri, West, Moore, Darrow, & Hinman, 1992) and have been successful in the attempt to increase women's feelings of self-efficacy, focusing so much of our prevention efforts on condom and clean needle use may be shortsighted in it's singular focus on behavior change. Instead, more of our efforts must focus on discovering other risk factors for HIV among women, and antecedents for behavioral risk and other points of intervention which may lie outside of the individual. The theoretical concept of social conditions allows us to look beyond behavior and into the social environment to examine conditions that may be at the source of certain behavior, which has been linked to HIV risk. As Link & Phelan pointed out, the focus on individual behavior change appears to be the simplest and most accurate way of altering the incidence of disease, in this case HIV infection. However, this focus has not resulted in a global decrease of HIV infection. While the behavioral focus makes objective sense, a wider lens focused on the environment may also highlight some environmental factors, which may be amenable to intervention, not at the individual level but at the familial, institutional, or societal level. Toward that end, risk factors other than those traditionally studied are discussed.

Non-Traditional Risk Factors for HIV Infection among Women

Poverty, discrimination, and violence against women are not considered risk factors for HIV infection; however, some of these social conditions may be the fundamental etiology of HIV infection in women. These characteristics can sometimes be attributed to many women who are at risk for HIV infection. It is against this backdrop that a review of the evidence linking risk of HIV infection in women in the U.S. to inequalities involving race/ethnicity, gender, and social class is related to a theory of the social environment as a fundamental cause of disease. Economic, racial/ethnic, and gender inequalities (which includes violence against women), in the literature on women and HIV are discussed below.

Economic Inequalities and HIV

In addition to drug use and sexual behavior, poverty is an indicator of HIV infection in women (Farmer, 1998; Brown, Melchior, Reback, & Huba, 1994). Poverty and gender inequalities may be some of the reasons why the fastest HIV epidemics are among women. However, few studies have linked economic conditions in the U.S. to the prevalence of HIV. Wallace (1988) used analytic techniques of population and community ecology, quantitative geography, and epidemiology to link a reduction in public health funding and services to poor neighborhoods in the Bronx to high concentrations of HIV. Wallace's study details that during a severe economic recession in the 1970s, city services were markedly reduced in areas with high population density. For example, during this time the New York City Fire Department reduced staff by 30 percent in an area with high fire rates. These neighborhoods were also among the poorest in the city and lacking in political influence to maintain needed services. Wallace notes:

> "By 1980, 50 to 80 percent of housing had been destroyed, a figure unprecedented in an industrialized nation not involved in total war. Where communities once lived, hulks of burned and abandoned buildings and vacant lots remained... Both the devastated zones and nearby communities experienced rising rates of homicide, suicide, drug and alcohol abuse, HIV infection and AIDS...the fate of the south Bronx reflects the vulnerability to HIV infection

created by processes of urban decay already widespread in many U.S. cities" (p. 31).

Wallace (1988) and Drucker (1990) build upon a framework of political economy of health by separating out the relationships between urban crises in housing, depleted city budgets, poor schools, and unemployment and relating these economic conditions to the dissolution of family and social networks and the spread of HIV.

Fife and Mode (1992), Hu (1994) and Simon and colleagues (1995) provide evidence which links neighborhood level income data to AIDS incidence in urban areas. By linking AIDS incidence data to the 1990 census-based socioeconomic measure of census tract zip code, these authors present data on socioeconomic inequalities in the distribution of AIDS. Overall, they found that the incidence of AIDS was between two and 13 times higher in low-income areas when compared to high-income areas. Simon, Hu, Diaz and Kurndt (1995) documented an inverse relationship between AIDS incidence and income among four racial/ethnic groups; however, none of these studies reported the incidence of AIDS in women in relation to income. Because of the aggregate measures utilized in these studies, it is hard to link the social condition to the actual behavior. This method of community focused study has the potential for ecological fallacy, especially as it tries to relate urban problems to the individuals. Other biases of these studies include an unclear definition of AIDS diagnosis, and who within these communities was tested for HIV. Nonetheless, these studies are good examples of research into economic disadvantage at the community level and the corresponding rates of HIV and AIDS incidence. And this method of study provides methods and a way to examine social conditions, to see if this relationship really exists.

Social class in relation to incidence of AIDS among women remains even more understudied in US research. Studies that have examined women's risk of HIV infection in relation to economic inequality and economic policies are limited. However, several studies have described the conditions of poverty, including homelessness in women who are at risk for HIV infection. Brown, Melchior, Reback, and Huba (1994) conducted an analysis of an ongoing study, which described the material deprivation among 887 low-income women living in inner-city neighborhoods in Los Angeles. The majority of women in this study reported less than $1000 in monthly income and received their primary economic support from public assistance or from male sex partners. Initial data from two ongoing national cohort studies of HIV-positive women have reported similar economic status (Barkan, et al., 1998; Solomon, et al., 1998). The HIV Epidemiology Study (HERS) and the Women's Interagency HIV Study (WIHS) which have enrolled over 3000 HIV-positive women describe most of the women with HIV in the US as living and caring for children in conditions of severe poverty. Despite this evidence that HIV-positive women, and those at risk for HIV infection are living in conditions of poverty, none of these studies provide an economic comparison of women who are not characterized as being at risk for HIV infection.

Brown and Weissman (1993) suggest that women who are at risk for HIV are economically more destitute than men. Data from the National Institutes of Drug Abuse (NIDA) National AIDS Demonstrations Research programs which enrolled 6609 women who were injection drug users showed women are less likely to be earning a legal income than men and therefore more reliant on other means of support. Forty-two percent of the women in this study said they relied on illegal means of income, primarily sex work, while nearly 30 percent of the women were dependent on male partners for financial support. In addition, the women in this study were two times more likely than men to have children living with them, which means their incomes were required to support children in addition to themselves. These authors have provided data that has been discussed anecdotally and found in some ethnographic work on injecting drug users (Watters, 1994). This study provides a needed comparison between women and men injection drug users and their economic circumstances, even so, this is another study without a comparison group of women. The results of this study does not highlight how, or if injection drug using women are different, in terms of their economic position to men, than women who are not injection drug users.

Diaz, Chu, Buchler, Boyd and Checko (1994) interviewed 428 women and 2470 men with AIDS, and measured education, household income, and current employment status. These three measures indicated that men fared better than women in current socioeconomic status did. Overall, more than half of the women had not completed high school, the majority were unemployed, and over two-thirds had an annual household income of less than $10,000. In an analysis based on race, nearly 100 percent of black women reported an income of less than $10,000 compared to 77 percent of white women. The authors of this study also addressed one of the criticisms of studies on income and disease, namely which is a consequence of which, or which came first, AIDS or low-income. However, what is sorely lacking in these studies of women economic inequalities and HIV there is no comparison to a general population or to any suitable group of women. The comparison group of men provides some information about these women, however, the findings do not differ from the majority of studies on gender differences and economic inequalities.

Among studies that have specifically studied homelessness and HIV, the greater part have focused on seroprevalence rates. In a search of the literature on homeless adults and rates of HIV infection, all studies consistently found higher rates of HIV infection when compared to the general U.S. population (Murrain & Barker, 1997; Paris, East, & Toomey, 1996; Fisher, Hovell, Hofstetter, & Hough, 1995; St. Lawrence & Brasfield, 1995; Allen, Lehman, Green, Lindegren, Onorato, Forrester & The Field Services Branch, 1994; Zolopa et al., 1994). In addition to documenting seroprevalence rates among the homeless, many of these studies link the HIV rates among women to drug use, trading sex for drugs, increased rates of HIV infection among social networks of women, alcohol abuse, time homeless, and more recently to violence which homeless women experience (Farley & Barkan, 1998; Fisher, Hovell, Hofstetter & Hough, 1995; Herndon, Kilbourne, Wenzel, Andersen & Gelberg, 1998; Smereck & Hockman, 1998). Given the prevalence rates of HIV-infection among the homeless, and the risk factors which have been found in studies of the homeless, the social environment of homeless women is an area of needed study.

Use of race/ethnicity as a marker for social class in AIDS incidence has been inferred by a number of studies (CDC, 1996; Curtis & Patrick, 1993). The underlying assumption of these studies, that higher rates of AIDS and HIV infection among African American and Latino populations reflect greater poverty among these groups, has not been substantiated (Williams, 1995; Zierler, 1997; Zierler & Krieger, 1997). Not having accurate data on social class and HIV supports an interpretation that confuses the issues of class position with another dimension of racial/ethnic categories: racism (Williams, 1995; Krieger, Williams & Moss, 1997).

Race/Ethnicity and Racism in HIV

No published studies have been conducted that specifically measure racism or racial discrimination in the lives of HIV-infected women, or in women at risk for infection (Zierler, 1997). There are, however, numerous studies that have purported to measure racial differences in HIV risk, or in disease progression. Although studies on AIDS incidence are similar to other studies of disease which have looked at racial differences, the understanding of racial differences in health from a scientific perspective is limited (Williams, 1997). Studies on AIDS and race may be classified as interpreting race in one of four ways. First, that racial/ethnic difference reflects a biological difference (Lucey, Hendrix, Andrzjewski, Melcher & Butzin, 1992; Rushton & Bogaert, 1989); second, that race/ethnicity is a marker for social class (Curtis & Patrick, 1993); third, that racial/ethnic categories reflect culture (Nyamathi, 1993; Levine, 1995), and fourth, that racial differences in AIDS incidence represents policies of racial discrimination (Wallace, 1988; Drucker, 1990).

Interpreting racial/ethnic differences as markers for biological differences is problematic because race is primarily a social category and not a biological construct. The evolution in the definition of race in the social sciences reflect a consensus that racial classifications do not reflect biological or genetic homogeneity (Gould, 1977; Williams, Lavizzo-Mourey & Warren, 1994; Williams, 1997), but rather has emerged as a social and political construct (Williams, 1997). The link between selectively based physical characteristics and so-called race-specific diseases accounts for only a minute percentage of each racial group's overall morbidity and even less mortality (Polednak, 1989). Sickle cell anemia, for example, the one known potentially fatal black-linked disease, accounted for only 0.3 percent of the 37 percent higher age-adjusted death rate in 1977 for the U.S. black compared to the white population (Cooper & David, 1986). HIV infection and AIDS, although demographically related to race/ethnicity has no biologic or genetic relationship to African Americans or Latinos.

Second, although disparities in socioeconomic conditions may partially explain racial/ethnic inequalities in illness, these racial/ethnic differences in AIDS persist within class strata (Simon, Hu, Diaz & Kerndt, 1995). Persistence of differences may reflect confounding due to inadequate measure of socioeconomic status, non-economic aspects of racial discrimination, or differences in cultural practices unrelated to inequality (Zierler & Krieger, 1997). And third, there are important dimensions of race/ethnicity as a result of a shared culture, ancestry, and histories of domination and struggle (Airhihenbuwa, DiClemente, Wingood & Lowe, 1992; Cooper & David, 1986; Mays & Cochran, 1987). However, to describe relationships between African American culture, Latina culture, or white culture and HIV infection is deductive and obscures the heterogeneity of cultural experience (Krieger, 1989; Krieger & Margo, 1994; Williams, 1996; 1997) and is not based on a firm scientific foundation (Williams, 1997).

Notwithstanding that no empirical studies on racism against women and HIV exist in the literature, Zierler and Krieger (1997) hypothesize that both economic and non-economic forms of racism may create conditions affecting women's risk. A number of remarks in the literature on racial/ethnic disparities in AIDS have called attention to economic inequalities rooted in racial discrimination as the cause of HIV infection in women and men (Wallace, 1985; Dalton, 1989; Friedman, Sotheran, Abdul-Quader, Primm & DesJarlais, 1987; Friedman, Stepherson, Woods, DesJarlais, & Ward, 1992; Holmes, 1991; Krieger & Appleman, 1986; Mays & Cochran, 1987; Thomas & Quinn, 1991). Utilizing a theoretical perspective which places social conditions as a fundamental cause of disease, these papers emphasize that the excess risk among African Americans and Latinas reflect underlying forces of discrimination in housing, earning power, unemployment, and education (Holmes, 1991; Thomas & Quinn, 1991; Quinn, 1993). Living amidst social conditions and constraints produced by racial discrimination in education, employment and housing may be associated with an increased risk for drug use, partnerships with drug users, and income strategies that may involve sexual risk taking and drug use (Zierler, 1997; Zierler & Krieger, 1997). Although studies have not measured how racial discrimination and resistance to racism may affect women's risk of HIV infection, effects of racism on health in other situations have begun to be measured and demonstrated in relation to elevated blood pressure (Krieger & Sydney, 1996; Williams, 1996) and impaired mental health (Cochran & Mays, 1994; Dressler, 1993; Thomas & Quinn, 1991).

Gender Inequalities and HIV

Women's risk of HIV infection may also be related to both economic and non-economic forms of gender inequality, especially as they pertain to sex, drug use, and violence. Women may have unsafe sexual relations with men in a context that is consensual and loving. However, when sexual relations preclude the use of condoms as a result of fear of losing material support for women and their children, or due to the belief that women should not make sexual demands of men, or because of a fear that men will react violently to a discussion about condom use, it is gender inequality which is determining women's risk for HIV infection (Zierler & Krieger, 1997).

Amaro (1995), Chavkin, Driver and Forman (1989), and Pivnick (1993) have all conducted studies which document that economic dependence on men who are primary partners affects women's perception of or practice in influencing partners' use of condoms. In a study of African American women in Los Angeles, Wyatt and Dunn (1991) found that women who depended on their male partners for financial assistance for housing were more likely to have sex without condoms than women who did not economically depend on men.

For women, non-economic dependence on men may also affect risk for HIV. Amaro (1995) in summarizing 2527 interviews with Latina women described several reasons why women having sex with men do not use condoms. Women expressed feelings of powerlessness, low self-esteem, isolation, lack of voice, and inability to affect risk reduction decisions with male partners. Studies have also found that condom use was less likely when women felt they needed men for social status (Pivnick, 1993), or protection because women were living on the streets (Fisher, Hovell, Hofstetter & Hough, 1995), or when young women and adolescent women were sexual with older men (Alan Guttmacher Institute, 1994; Males, 1995). The methods used in these studies range from qualitative interviews, to measures which have been developed to more adequately uncover the issues that women have specific to gender relations and condom use. Although these studies provide a range of information on personal and individual motivations for condom risk, there is no discussion of how these women differ from women who were able to use condoms. This area of research which attempts to relate gender and power dynamics to HIV risk is primarily focused on uncovering themes and correlation and has not progressed to a point where causal relationships have been described. Violence, which is one aspect of gender discrimination, and HIV risk is discussed in more detail.

Violence and HIV Risk

By now, a number of studies suggest that a history of child sexual assault (CSA) and rape are associated with an increased likelihood of behavior that is associated with HIV transmission (Paul, Catania, Pollack & Stall, 1999; Zierler, Witbeck & Meyer, 1997, Irwin et al., 1995). This association has been documented primarily with women and gay/bisexual men. Behaviors that have been associated with a history of CSA and rape include vaginal and anal receptive sex without a condom, and drug use, primarily use of crack cocaine. A review of these studies highlights some of the main findings on the association between an experience of violence, an inherently social phenomenon, and HIV risk behavior.

Violence in this paper is defined as interpersonal violence, which includes CSA, rape, domestic violence, and battery or assault perpetrated by family, partners and unknown assailants. Current estimates of violence among women range from studies which estimate rape - 9-24% of women are raped at least once in their lifetime (Koss, 1993) - to community-based studies which estimate that one quarter of women were sexually abused as children (Finkelhor, 1994). And include the 1985 National Family Violence Survey (Wauchope & Straus, 1990) which found that a minimum of 1.5 million children had been physically abused by their parent during the year they were surveyed, and further estimates the prevalence of 'severe' child abuse to one in every ten children. Although the estimate of violence is high, all of these sources believe the prevalence of violence against women and children is underestimated. Irwin et al (1995) through the Multi-Center Study of Crack Cocaine and HIV infection surveyed participants who were recruited in three poor communities in New York City, Miami, and San Francisco. Eligibility included current, regular crack cocaine smoking, current injection drug use, current use of both and those whom had never used crack. The analytic sample included 1105 women. Interviewers asked the question 'In the last 12 months, has anyone forced you to have vaginal or anal sex against your will?' Those women who reported yes were identified as survivors and those women who answered no were identified as the control group.

The findings of this study suggest that survivors were more likely to report ever having injected drugs (OR 1.7) and were five times more likely to report current, regular use of crack cocaine than those in the control group (Irwin et al., 1995). Additionally, survivors had nearly ten times the number of male sex partners in their lifetimes, during voluntary or involuntary sex. Survivors were nearly eight times as likely to have engaged in sex work, and among current sex workers, survivors tended to be less likely than controls to report having used a condom with paying partners. Moreover, survivors were nearly twice as likely as controls to be HIV-infected, and to report HIV risk behaviors which included injection drug use, receiving money or drugs for sex, having had sex with a male injection drug user, and having sex with an HIV-infected man.

The findings of the Irwin (1995) study are important for several reasons. First, one of the strengths of this study is their use of a comparison group that was recruited at the same time and in a similar manner as the survivor group, with the main difference being a reported history of rape.

Secondly, the authors are able to associate sexual assault with HIV risk behavior. Third, the findings of this study strengthen the data that indicate HIV risk behavior may be associated with a social condition, in this instance rape.

Notwithstanding the strengths of this study, there are methodological problems with this study. The authors did not report asking about childhood sexual abuse, which may be related to some of the HIV risk behaviors in both their control group and the survivor group (Zierler, Witbeck & Mayer, 1996). Additionally, because timing of risk behavior and rape are not discussed, it is impossible to say whether the sexual risk behavior or the rape occurred first.

Zierler, Witbeck and Mayer (1996) also analyzed HIV risk behavior and sexual assault. Their study was conducted as a sub-study to a larger longitudinal study of HIV risk behavior and prevalence among women. Selection of their sample was independent of the respondent's history of sexual assault, although questions to elicit history of sexual assault were included in their study measures.

The question in their study used to elicit assault was 'have you ever been raped or forced to have sex?' Women who acknowledged a history of sexual abuse further described the frequency and timing (during childhood, adolescence, adulthood, or during any combination of these periods of time) (Zierler, Witbeck & Mayer, 1996). Women were defined as having been exposed to CSA if they reported a history of rape or forced sex at least once during childhood or as a teenager. Exposure to adult sexual abuse was defined as a report of rape during adulthood, Women were defined as not exposed if they reported no history of rape or forced sex in their lifetime. The sample was recruited from women who came to an HIV testing and counseling program at a teaching hospital in Rhode Island.

The findings of this study suggest an association between women's experience with rape in adulthood and several characteristics such as sexual experience before age of 15, more than three partners in the last year, unprotected sex in last year, injection drug use before age 16, and cocaine use. In addition, the findings of this study suggest that women who have been sexually assaulted as children and adults were more likely to be assaulted in the past year, especially when using crack and being involved with sex work. Women who were HIV-positive (18%, 74/408) were compared with women who were HIV-negative on these characteristic which were related to rape as an adult. Thirty-five percent of HIV-positive women had been raped as adults compared to 43% of women overall. Although HIV risk behavior was associated with a history of sexual assault, HIV seroprevalence was not significantly associated with having been assaulted.

The findings of this study are strengthened because of the design, which allowed for a comparison between those women who had been exposed to sexual assault and those who had not. In addition, because a proportion of the sample were HIV-infected, the authors could look beyond risk behavior and compare HIV-positive with HIV-negative women on the variables of interest. Even so, the strength of the study suffers because of methodological issues similar to the Irwin (1995) study. We do not know if rape was an antecedent of acquiring HIV infection or of engaging in risk behavior, or whether it occurred following infection or behavior. Despite this weakness, the authors were able to document an association between rape and sexual risk behavior, and behavior and HIV serostatus.

Paul, Catania, Pollack and Stall (1999) in their study of gay/bisexual men utilized data from a study of men in four major US cities. Their sample utilized random telephone dialing in zip code areas, which were identified to have large numbers of gay/bisexual men. Over 60,000 households were screened to yield an analytic sample of 2707 men. Their dependent variable of sexual risk taking was identified as receptive anal intercourse to ejaculation without a condom with a non-primary partner.

Findings of the Paul et al (1999) study suggest that men who experienced sexual coercion prior to the age of 17 were 1.8 times as likely to report sexual risk taking. In addition, men who reported childhood physical abuse were 1.5 times as likely to report sexual risk taking with a non-primary partner.

Although this study was conducted with men only, the findings are important. The authors who are widely published in the field of sexual behavior and sexual risk for HIV purposefully focused one aspect of their study on the issue of sexual abuse. They elicited sexual coercion through a direct query or by inferring power inequities (e.g. age). For example, if a subject reported sex before age 13 with a partner who was at least five years older, or sex between the ages of 13 to 17 with a partner who was at least 10 years older, the authors defined this as sexual coercion. This work, which associates child sexual coercion to unprotected anal intercourse among gay/bisexual men, one of the strongest risk factors for HIV infection, strengthens the connection between characteristics of the social environment and HIV risk behavior.

The proportion of homeless women who have experienced violence has been well documented in the literature (Irwin et al., 1995; Fisher, Hovell, Hofstetter & Hough, 1995; Browne & Bassuk, 1997; Clarke, Pendry, & Kim, 1997). A nationally representative sample found low-income and homeless women at elevated risk of severe victimization (Wauchope & Strauss, 1990). Although women of all socioeconomic status experience violence, women married to men with lower occupational status or men who were unemployed have been found to be at a greater risk of severe domestic violence, including rape (Hotaling & Sugarman, 1990). Similarly, in Kantor, Jasinski, and Aldarondo's (1994) national survey of 1,970 women, a husband's unemployment was significantly predictive of intimate partner violence. Another small study of narratives of homeless women suggests that women in their sample became homeless because of domestic violence in their relationship with an intimate partner (Clarke, Pendry & Kim, 1997).

In a case-control study which was aimed at comparing intimate violence among homeless and housed poor women found differences in the experience of violence among their sample (Browne & Bassuk, 1997). The sample in this study was recruited from homeless shelters (cases) and low-income women who reported to the Massachusetts Department of Social Welfare as recipients of Aid to Families with Dependent Children (controls).

The findings of this study suggest small differences between sheltered homeless women and poor housed women were overshadowed by the high report of violence and injury in both groups. One significant difference between groups was that housed women were more likely to receive medical treatment when they were abused. These findings suggest that childhood physical violence or molestation predicted physical violence (OR 1.9) or injury (OR 2.5) by a current of most resent partner. The authors did not ask about history of rape other than childhood molestation or include rape as a type of physical violence, which was a weakness in this study.

There is a paucity of reported research, which has examined the link between homelessness, sexual assault or physical abuse and HIV risk behavior. However, two studies, which do occur in the literature, have significant findings in this area. First, the study discussed earlier (Irwin et al., 1995) which reported a link between rape and HIV risk behavior in an urban sample, also collected data on homelessness. These authors found a significant difference between cases and controls on variables of current home that included categorization of on the street or in a shelter or welfare hotel. For those women living on the streets they had an increased odds of 3.2 to being rape survivors, as well as those living in a shelter or welfare hotel had an increased odds of 3.8 of being rape survivors and to have been incarcerated or 2.5 during the preceding twelve months.

Fisher, Hovell, Hofstetter and Howell (1995) in their community-based sample of 53 homeless women found that 91% of their sample had been battered at some time in their lives. Thirty-eight percent had been battered when they were housed, 48% had been battered when they were housed and homeless, and 4% had been battered when they were homeless. Through use of correlation, Fisher et al found that HIV risk behavior was associated with being battered. The design limitations of this study include the small sample size, and possible selection bias.

This discussion of the literature and what is considered traditional and non-traditional risk factors for HIV leads us to the measures which will be utilized in this study of social conditions and HIV risk behavior. The social conditions that are under study include the experience of violence, unfair treatment and the perception of discrimination based on gender, social class, race or color, drug use, or sexual orientation. The measurement of these conditions and the issues surrounding the measurement of these conditions are discussed, as well as, the measures of HIV risk behavior utilized in this study.

The Measurement of Social Conditions

In this study, the measurement of contextual factors that may relate to HIV risk behavior among a sample of homeless women is undertaken. This allows for the study of social conditions in a community-based context and the examination of the social and economic aspects of the social environment where privilege and discrimination exist. The specific social conditions that are chosen for examination in this study include an experience of violence including adult and childhood sexual assault and domestic violence, and perceived discrimination because of race, gender, and social class. The choice of these particular concepts allows for a focused study of how, if any, these inequalities relate to HIV risk behavior in this sample of homeless women. If nursing research and practice are guided by the theoretical underpinnings of the social environment, the nursing profession could provide the necessary insight into the manner in which the social environment plays a role in the etiology of HIV infection. Such knowledge would have specific implications for both practice and research, requiring community focused interventions and research on the client as the community.

Measuring the Dimensions of Perceived Discrimination and Violence

Discrimination, unfair treatment, and violence, although proposed as measures of the social condition, are all person-level measures, and more accurately an attempt to measure an event in one's life. If aspects of discrimination and unfair treatment were to contribute to poor health, either in conjunction with or independently from material deprivation, it has been hypothesized, they might do so in one of two ways (Krieger, 1989). One way would be through biased delivery of health care that might affect both diagnosis and treatment of an individual (Woolhandler, Himmelstein, Silber, Bader, Hornly, & James, 1985; Fee & Krieger, 1993; Williams, 1994). The alternate way would involve stress, anger, and possibly violence (Krieger, 1989; Miller, 1987; Zambrana, 1987). The experience of being made to feel inferior, or being verbally or physically assaulted or harassed because of a person's race, gender, social class, sexual orientation, or drug use identity may elicit anger, fear and/or self-doubt (Zambrana, 1987; Johnson, 1973; Neighbors, 1987; Center for Minority Group Health Programs, 1978). Possible responses to this treatment may range from acceptance to resistance, which could depend on the degree of threat involved and the depth of the attacked person's internalized oppression (Krieger, 1989; Fee & Krieger, 1993; Zambrana, 1987; Barbarin, Maish, & Shorter-Gooden, 1981).

Given the suggestive evidence which associates emotional stress, degree of control, and powerlessness (Amaro, 1995; Bedimo, Bennett, Kissinger, & Clark, 1998; Brown, 1995; Catania et al., 1994; Irwin et al, 1996) with women's HIV risk behaviors, it may be appropriate to measure perceived discrimination, unfair treatment, and violence, and it's association, if any, to HIV risk factors. Krieger (1989), who developed a measure of discrimination and unfair treatment that will be used in this study, hypothesized that the direction of this relationship could be either positive or negative. What Krieger and others found was that those who least acknowledged stress tended to be at the greatest risk for hypertension (Krieger & Sydney, 1996; Winkelby, Ragland, Syme, & Fisher, 1988). Further discussion of the measures of perceived discrimination, unfair treatment and violence are included in Chapter 3.

Correlates of Social Conditions

Given the fact that perceived discrimination, unfair treatment and violence are multidimensional phenomena, there is a need to examine and understand the variables, which may direct or mediate the variables of interest. In this study, depression, age, and time homeless are considered as correlates of perceived discrimination and violence. A review of the literature on these correlates is presented.

Time Homeless

The amount of time a woman has been homeless may affect HIV related behavior, emotional stress or feelings of powerlessness (Kalichman & Stevenson, 1997; Robertson & Winkelby,1996; Fisher, Hovell, Hofstetter & Hough, 1995). In a study of homeless adults in San Francisco, the authors found longer time homeless to be associated with poor or perceived health status (White, Tulsky, Dawson, Zolopa & Moss, 1997). While these findings suggest that those who remain homeless longer, the study design was cross-sectional and therefore it is difficult to say definitively if the poor health status came first or the longer time homeless. In another study of homeless women and HIV risk, Fisher et al (1995) theorized a relationship between HIV risk behavior in their sample and a mean time homeless of 24 months. Although the authors did not test the relationship between these two variables, this is one explanation they gave for higher proportions of HIV risk behavior among women who were chronically homeless. Despite the weaknesses in the Fisher (1995) time homeless may influence HIV risk behavior and will therefore be tested in this study.

Depression

In a study of HIV risk factors among homeless women (Herndon, Kilbourne, Wenzel, Andersen, & Gelberg, 1998) the authors sought to describe the prevalence and predictors of HIV-related risk behavior among homeless women in Los Angeles county in a probability sample of 960 homeless women between the ages of 15-44. Researchers interviewed women in 78 shelters and meal programs in the Los Angeles area. HIV risk factors identified in this study were injection drug use, sex without a condom, or trading sex for money, drugs, food, shelter, or for any other reason. The authors examined a number of predictors for HIV risk behavior including depression. Women who used injection drugs (7% of the entire analytic sample of 630) were significantly more likely to be depressed than women who reported unsafe sex as their risk behavior.

In a study of depressive symptoms and risk factors for HIV acquisition among black women attending urban health centers in Baltimore, the researchers found that women with higher levels of depressive symptoms were more likely to engage in HIV risk behavior (Orr, Celentano, Santelli, Burwell, 1994). This study is unique because the focus was on helping with depression and measuring risk behavior as the outcome, and not focused on behavior change. In another study of depression and decision-making among intravenous drug users (Joe, Knezek, Watson, Simpson, 1991) found that depression was high among the sample. Eighty-three percent of the sample showed some depression, with 23% severely depressed, 39% moderately depressed, and 21% mildly depressed. Individuals scoring higher on depression on both tests tended to score lower on decision-making around HIV risk behavior. Significant demographic associations with age, gender, education, and race-ethnicity were found for the depression and decision-making scales. Significant positive correlation's were found between depression scores and intravenous use of cocaine only, heroin and cocaine combined, and heroin only. Also, intravenous use of cocaine only and of cocaine and heroin combined were negatively related to decision-making. Sexual risk behavior was positively correlated with depression and negatively correlated with decision-making. The results of these studies indicate depression as a correlate of HIV risk behavior.

Gottheil et al (1998) examined HIV risk behavior among a sample of women and men receiving treatment for cocaine addiction. As part of their measure of reducing HIV sexual risk behavior in this group, the authors found their sample to have higher scores on the SCL-90-R symptom scales, the Beck Depression Inventory than a comparison population. In addition, following an intervention to reduce sexual risk behavior was associated with depression symptomatology.

Camacho, LM; Brown, BS; Simpson (1996) in a study of psychological dysfunction and HIV/AIDS risk behavior sampled 834 daily opioid users entering methadone treatment programs. A composite measure of psychological dysfunction was created using depression, anxiety, and hostility scales. This measure was significantly related to needle risk in terms of injecting with used equipment, sharing of drug paraphernalia, and sharing with strangers. Psychological dysfunction was also related to sexual risk taking in terms of number of partners, unprotected sex with other injection drug users, and trading sex. Use of cocaine was significantly related to all measures of injection and sex-related risk taking; use of speedball (heroin and cocaine) was significantly related to use of dirty equipment and sharing of paraphernalia.

All of these studies were conducted with people who were engaged in care, for example drug treatment or attending a health clinic, and so these samples may not be representative of the groups they are reporting on. Moreover, all of these studies used a cross-sectional research design, therefore causality can not be hypothesized from these results. Nonetheless, the evidence that depression correlates with HIV risk behavior has been documented among several different samples of women.

Age

Research on the relationship between age and HIV risk behavior has not yielded consistent findings. Older age has been associated with specific HIV risk behaviors, including injection drug use and needle sharing (Edlin et al, 1995; St. Lawrence & Brasfield, 1995). In other studies younger age has been associated with other HIV risk behaviors, most notably crack cocaine use and trading sex for drugs (Irwin et al, 1995). Age will be considered as a potential mediating variable of HIV risk behavior.

HIV Related Outcomes

Three HIV risk behaviors are examined in this study. Sexual risk behavior was operationalized as report of sex without a condom with a main or casual male partner in the last twelve months. Injection drug use was operationalized as any lifetime injection drug use. And crack cocaine use was present if a respondent answered yes to any lifetime use of crack cocaine.

Research Questions

The primary aim of this study was to examine social conditions among a sample of homeless women and to assess the relationship between social conditions and HIV risk behavior. More specifically, the objectives of the study were:

1. To describe HIV risk behavior (sexual behavior and drug use), history of violence, and perception of unfair treatment in this sample.
2. To examine the relationship between the two main variables of interest, perceived unfair treatment and a history of violence and the outcome, HIV risk behavior.
3. To explore other variables which correlate with the outcome variable HIV risk behavior, and the inter-relationships among these correlates, and the variables of interest, violence and perceived unfair treatment.

The research questions were as follows:

Research Question 1: Who are the women in this sample, what is their social, demographic and health characteristics?

Research Question 2: How does this sample of women compare to a national sample on the measure of health status?

Research Question 3: What proportion report unfair treatment in this sample, and, in what situations do women report perceived discrimination?

Research Question 4: Are there racial or ethnic differences between women for the variables of interest, unfair treatment, violence, and HIV risk outcome variables?

Research Question 5: What HIV risk behavior do women report?

Research Question 6: Is there a difference in HIV risk behavior between women who report a history of violence and those who do not?

Research Question 7: Is there a difference in HIV risk behavior between women who report unfair treatment and perceived discrimination and those who do not?

Chapter 3

Methodology

This study used a descriptive, cross-sectional study design to describe perception of discrimination, unfair treatment, and history of violence and to explore the relationships between the independent and dependent variables. This chapter describes the objectives, study aims, study design, data collection methods, data collection instrument, sample description, plans for analyses, and study limitations. Interpretation of the variables in the instrument used is also discussed.

Study Objectives

The primary goal of this study was to investigate the relationship between the social environment and women's behavioral risk for HIV infection. More specifically, the study assesses the effects of unfair treatment and a history of violence (defined here as physical harm including rape or sexual assault as an adult or a child) on sexual and drug use behavior in a sample of urban, marginally housed, poor women.

It is likely that determinants of HIV risk among women include social inequalities involving race/ethnicity, class, gender, and sexuality. These inequalities can begin to explain why the women most affected by HIV are predominately African American and Latina women, and women living in conditions of poverty. In this social environment, women's strategies toward creating meaningful and safe lives may be hindered by the social conditions of their existence and their strategies for survival may increase their risk for HIV exposure. Research, which investigates the social environment as a determinant of HIV infection, is only beginning and must be expanded to clarify the relationship between this and other determinants of HIV risk among women. Thus, the objective of this study is to examine the association between social environment variables and risk for HIV.

A fundamental assumption in this investigation is that women's behavior which places them at risk for HIV infection is not solely a function of individual will and self-efficacy, but is also an effect of the social environment. This assumption establishes the basis and context for linking behavioral characteristics of women at risk for HIV infection and characteristics of gender and societal discrimination. As Zierler and Krieger (1997) noted: social inequalities lie at the heart of risk for HIV infection among women in this country.

Another assumption of this study is that the participants who answered the questions posed to them in the instrument answered truthfully. Asking for sensitive information from women about their sexual behavior, licit and illicit drug and alcohol use, experience of violence and perceptions of being treated unfairly raises questions regarding the accuracy of this data. The effects of social desirability using a self-report method, given that some of the behaviors asked about are known to contribute to HIV infection was unavoidable in this study. In fact, one of the issues in the measurement of the perception of unfair treatment may be that perception is more important than reality. For example, the literature on homeless women describes women with little to no resources (Robertson &

Cousineau, 1986; Zolopa et al., 1994) and there is the presumption that discrimination of the homeless has occurred. Nonetheless, subjectively, homeless women may not perceive that they have been treated unfairly in situations in which the researcher assumes they have.

As discussed in Chapter 2, self-report around sexual behavior and drug use, multiple studies have described sexual behavior as being more prone to under reporting as opposed to over reporting (Catania, Gibson, Chitwood, & Coates,1990). In addition, the use of self-report of drug use compared with results of urinalysis has shown that, in several studies, drug users' self-reports of their drug use are valid (Booth, Crowley & Zhang, 1996; Magura, Goldsmith, Casriel, Goldstein, & Lipton, 1987). In the area of research, which asks about the experience of violence, there is little reported in the literature about the validity of these questions.

more specifically, the aims of this study are to:

1. To describe HIV risk behavior (sexual behavior and drug use), history of violence, and perception of unfair treatment in this sample.
2. To examine the relationship between the two main variables of interest, perceived unfair treatment and a history of violence and the outcome, HIV risk behavior.
3. To explore the variables which correlate with the outcome variable HIV risk behavior, and the inter-relationships among these correlates, and the variables of interest, violence and perceived unfair treatment.

Research Design

For the purposes of this study, a cross sectional study design is used. All variables, other than the questions about perceived discrimination and unfair treatment were taken from a larger study which was conducted simultaneously (See Appendix for Complete Study Description: *Coping and Social Supports in Homeless Women* M.Chesney and J.P. Tulsky, Co-PI's). The larger study had three data collection points. Due to the size of the survey instrument, the questions on perceived discrimination and unfair treatment were collected exclusively at times two and three.

Sample

Human Subjects Assurance

The study was reviewed and approved by the Committee on Human Research at the University of California, San Francisco. Participation was voluntary and all potential subjects were assured that their decision to participate in this study or not would in no way effect their stay in the homeless shelter. The purpose, nature, risks, and benefits of the study were reviewed with all subjects and written consent to participate was obtained. Subjects were provided with copies of the consent forms. Access to study data were restricted to the study staff.

Nature and Size of the Sample

The population of interest in this study included homeless women staying in shelters. The sample for this study was recruited from two homeless shelters in San Francisco: Episcopal Sanctuary (ES) and North of Market Multi-Service Center (NMMSC) in 1995. The recruitment occurred on weeknights after the curfew hours in each shelter. Recruitment was based on a systematic random sample from a list of bed numbers in the two homeless shelters, each had over 100 beds reserved for women. Women at designated beds were approached, given a brief description of the study, and asked if they wished to participate. The next bed number from the list replaced women who refused or who were deemed ineligible. Women were recruited on alternate weeks from each of the two shelters, and up to twenty women were enrolled every three weeks. Staff recognition and participant rosters were used to avoid recruiting the same women on different occasions. The accessible study population included all women who had an assigned bed in the shelter at the time of data collection, use of spoken English and ability to give informed consent. Exclusion criteria included women who did not converse in English or women who were unable to answer questions due to confusion or inebriation. Men were excluded from this sample. A total of 105 women living in one of two shelters were enrolled in this study.

Data Collection Methods

The survey was completed by all women enrolled in the study, (N=105). As stated before, the questions on perceived discrimination and unfair treatment were collected at times two and three. Participants were seen on three occasions during the study: within one week of being recruited, immediately after the intervention, and at a 3-month follow-up. Although this was part of an intervention study, this data represents baseline and the first follow-up visit when data on perceived discrimination and unfair treatment was gathered.

All interviewers were women with prior interviewing experience in either women's health or homeless research studies. A clinical psychologist trained individual interviewers on specific interview techniques. Interviewers offered referrals to the women and encouraged attendance at free public health clinics that were located within each shelter. The interviews were conducted in private offices in each shelter.

After giving informed consent to participate in the study each woman was given a face-to-face hour-long interview. A summary of women's health care recommendations which was individualized for each participant was given to each woman following each interview. In addition, a cash incentive of five dollars was given to each woman following the interview. Non-cash incentives, such as shampoo, lotion, soap, etc. and refreshments were also given to participants.

The baseline interview instrument was completed at the first study visit. Data collection administration of the Women's Health Interview Survey (See Appendix A for Instrument) and measure of perceived discrimination and unfair treatment. The instruments and scales used that are pertinent to this analysis are discussed below in detail.

Measures

Women's Health Interview Survey

The Women's Health Interview Survey includes established scales and items which were developed specifically for this study and include:

Sociodemographics: Indicators include attributes of respondents such as age,

age when first homeless, race/ethnicity, income, time homeless, current living situations, income, education, history of incarceration, and type of health insurance.

Health Characteristics: Indicators include when last seen by a health care provider, most recent test for HIV, TB, health status rating, depression, and social support.

The health status measure is taken from the Short-Form-20 Health Survey, (Stewart, Hays, & Ware, 1988) and has been extensively used and reported on in the literature (McDowell & Newell, 1996). This item is rated on a 5-point Likert scale. Responses for general perception of health range from (1) excellent, (2) very good, (3) good, (4) fair, and (5) poor. This single-item rating of health has been widely used to measure health perception (Davies & Ware, 1981). The main reliability and validity analyses for this measure were based on a sample of 11,186 adults. The internal consistently coefficient for this one-item scale of health status has been reported at 0.87 (McDowell & Newell, 1996). Results for this scale have been consistent across diagnostic, age, and educational groups (Stewart, Hays, & Ware, 1988).

Depression

The scale used to measure depression in this study is the Beck Depression Inventory (BDI). The BDI has been used extensively as a community-screening instrument for symptoms associated with depression and for several research studies (Beck, Steer, & Garbin, 1988). The content of this inventory emphasizes the respondent's attitude about herself (McDowell & Newell, 1996).

Furthermore, the items are grouped into 13 symptom items, which are graded in levels of intensity for each symptom. This gradation is based on Beck's theory that depression can deepen and with this change in depression the number and intensity of depression symptoms fluctuate (Beck, Steer, & Garbin, 1988). Numerous studies have used the BDI and reported on its reliability. These studies have used this measure in psychiatric patients and non-psychiatric patients, elderly respondents, and chemically dependent patients (Beck, Steer, & Garbin, 1988; Gallagher, 1986; Edwards, Lambert, & Moran, 1984). The mean reliability alpha for these studies was 0.82.

In addition, there is extensive information on the validity of the BDI. These studies have shown that the BDI is capable of discriminating between groups that contrasted in level of depression (McDowell & Newell, 1996).

Independent Variables

Perceived Discrimination and Unfair Treatment:

Table 1 presents, in the order asked, the interview questions pertaining to unfair treatment and perceived discrimination. This measure was modified from a previously developed questionnaire (Krieger, 1991; Krieger & Sidney, 1996). To determine whether women reported passively or actively responding to unfair treatment, two aspects were assessed: whether they typically tried to do something about such treatment (act) or not (accept), and whether they told others about it (talk) or not (quiet). A single measure addressing both components contained the categories: "act/talk," "act/quiet," "accept/talk," and "accept/quiet." (Krieger, 1991). These components were further reduced to active

response to unfair treatment which contained: ““act/talk,” “act/quiet,” “accept/talk,” and a passive response to unfair treatment which included: “accept/quiet.” This dichotomous response: active or passive was considered as the predictive variable for unfair treatment.

Questions regarding perceived discrimination due to: gender, race or color, social class, sexual orientation, or drug use were selected to reflect well-known and hypothesized situations in which discrimination might exist (Krieger, 1989; Krieger, Rowley, Herman, Avery, & Phillips, 1993; Feagin & Sikes, 1994; Essed, 1991; Benokratis, & Feagin, 1986; Gardner, 1995; Campbell & Schuman, 1969; Katz, 1986; Faderman, 1991). Response items are yes or no to each situation. Common to each were: “medical care”, “getting testing and counseling for HIV”, “getting testing and/or treatment for STD's”, “on the street or in a public setting”, and “getting a job”. This measure is similar to the one originally developed by Krieger, with a few exceptions. The investigator added “drug use” as one of the reasons that respondents may be discriminated against. In addition, “getting testing and counseling for HIV” and “getting testing and/or treatment for STD's” were added to the list of situations where one might be treated unfairly. The decision to add these items to the measure of perceived discrimination was based on the investigators previous work with HIV positive women drug users which reported unfair treatment among respondents in these areas (Dawson, 1997).

Table 1. Interview Questions Regarding Perception of Discrimination and Unfair Treatment

1) If you feel you've been treated unfairly, how do you usually respond, do you:

Accept it as a fact of life

Try to do something about it

2) And if you've been treated unfairly, do you:

Talk to other people about it

Keep it to yourself

3) Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your **gender** (i.e. because you are a woman) Yes or No?

Getting Medical Care

Getting Testing and Counseling for HIV

Getting testing and/or treatment for STD's

On the street or in a public setting

Getting a job

4) Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your **race or color**. Yes or No?

Getting Medical Care

Getting Testing and Counseling for HIV

Getting testing and/or treatment for STD's

On the street or in a public setting

Getting a job

5) Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your **socioeconomic position or social class**. Yes or No?

Getting Medical Care

Getting Testing and Counseling for HIV

Getting testing and/or treatment for STD's

On the street or in a public setting

Getting a job

Table 1, Continued.

6) Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your **sexual preference** (heterosexual, homosexual, bisexual) Yes or No?

Getting Medical Care

Getting Testing and Counseling for HIV

Getting testing and/or treatment for STD's

On the street or in a public setting

Getting a job

7) Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your **drug use.** Yes or No?

Getting Medical Care

Getting Testing and Counseling for HIV

Getting testing and/or treatment for STD's

On the street or in a public setting
Getting a job

History of Violence

The items used to measure this concept are in the health practice section of the questionnaire. See Table 2 for exact questions related to violence. These questions ask for personal experience with violence. Violence is defined as physical harm as well as rape or other sexual assault. The questions ask whether violence occurred as an adult or child and also about partner violence and stranger violence. The response items to these questions are yes or no. A final measure of violence experience was created that included each respondent who reported yes to any of questions about physical harm. In addition, there are questions about the use of medical care at that time with open-ended questions to determine why medical care was not sought.

Table 2. Interview Questions Regarding History of Violence

2) Now I have some questions about your personal experience of violence. Violence can include physical harm as well as rape or other sexual assault.

3) Can you remember having been physically harmed by a family member or family friend when you were a child? (when you were under 18). Yes or No.

4) How old were you the first time?

5) If a family member or family friend did harm you when you were a child, did anyone take you to the doctor the first time it happened or when it happened other times? Yes or No.

6) Have you ever been harmed by someone that you considered to be your partner, such as a boyfriend or a girlfriend? Yes or No.

7) Did you seek medical care?

8) Have you ever been harmed by someone that didn't know, a stranger? Yes or No.

9) Did you seek medical care?

Dependent Variables

Condom and Barrier Use with a Male Main or Casual Partner

Women were asked about sexual activity in the last twelve months with a variety of different partners. In order to include sexual behavior as an outcome variable, all questions relating to sexual behavior were re-coded to capture women who had sex without a barrier, with all partner types, in the last twelve months. Therefore, women who had sex without a barrier with men who were main or casual partners were re-coded as having unprotected sex within the last twelve months. This re-coded variable of unprotected sex is the outcome variable that is included in the logistic regression model. If women reported a main or casual female partner and no male sexual partner in the last 12 months they were not considered to have the variable – sex without a condom or barrier. Although women in this category did engage in unprotected sex, they were not considered to be at sexual risk for HIV. This decision has been substantiated in the literature which routinely defines unprotected vaginal or anal sex involving a penis as the HIV risk behavior (Gomez, 1998; Airhihenbuwa, DiClemente, Wingood, & Lowe,).

Injection Drug Use

Injection drug use was measured by asking respondents if they had used any injection drugs in the past 30 days or if they had regularly used injection drugs any time in their life. Regular use was defined as three or more times per week. For the outcome measure of injection drug use, the response to any lifetime use of injection drugs was used.

Crack Cocaine Use

Use of crack was measured by asking women if they had used cocaine (including freebasing, Crack) in the past 30 days or if they had regularly used cocaine at any time in their life. Regular use was defined as three or more times per week. For the outcome measure of crack cocaine use, the response to any lifetime use of crack was used.

In addition to separate categories of HIV risk behavior, a one-item response indicating any HIV risk behavior was created. If a woman reported yes to sex without a condom or barrier and she was included as a yes to any HIV risk. If a woman answered yes to injection drug use risk she was include as having any HIV risk, and if a woman responded yes to crack use she was included. Therefore the measure of any HIV risk includes women who reported one or all three risk behaviors. See Table 3 for questions pertaining to HIV risk behavior.

Table 3. Interview Questions Regarding HIV Risk Behavior

Sex without a Condom or Barrier

Now I'd have a few questions about your relationships and your sexual partners.

1) At what age did you become sexually active?
2) Have you been sexual active in the last 12 months with anyone?

A main partner is someone that you have sex with and you consider this person to be the person that you are the most serious about.

3) Have you had sex with a main partner in the last 12 months? (including now)
    4) If your main partner is a male, how often do/did you use condoms?

All of the time
Most of the time
Half of the time
Some of the time
Never
N/A

5) If your main partner is a female, how often do/did you use barriers (dental dams, gloves, saran wrap, etc.)?

All of the time
Most of the time
Half of the time
Some of the time
Never
N/A

Table 3. Continued

A casual partner is anyone that you have sex with but you do not consider this person to be a main partner to you. This person can be someone you've had sex with only once, or a few times, or you have sex with them on an on-going, casual basis. The important thing, however is that this person is not a main partner to you.

6) Have you had sex with a casual partner in the last 12 months? (including now)

7) If your casual partner is a male, how often do/did you use condoms?

All of the time
Most of the time
Half of the time
Some of the time
Never
N/A

8) If your casual partner is a female, how often do/did you use barriers (dental dams, gloves, saran wrap, etc.)?

All of the time
Most of the time
Half of the time
Some of the time
Never
N/A

Injection Drug Use and Crack Cocaine Use

Now, I have a few questions about your use of alcohol and drugs, both in the past and in the present. Tell me if you have used each drug in the past 30 days, or if you have used the drug regularly in your lifetime, regular use is 3 or more times per week.
For each drug please tell me how you took it, route of administration (Oral, Nasal, Smoking, Non IV injection, IV injection)

Heroin

Methadone

Opiates/analgesics

Barbiturates

Sedatives/tranquilizers

Cocaine (including freebasing, Crack)

Amphetamines (Crank, Speed, Methamphetamines)

Data Analysis

Data analysis strategies for this study include the use of descriptive statistics such as frequency percentages and measures of central tendency, to describe this sample of women. Inferential statistics, including test statistics and incidence interval procedures examined correlations and answer research questions. In these analyses, a two-tailed alpha < 0.05 was indicative of statistical significance. For univariate analyses, chi-square, and independent samples *t* tests were used to test the relationship between selected independent variables and the dependent variables. The independent contribution of variables, while controlling for the influence of other variables, were measured by multivariate multiple logistic regression. Each independent variable was examined separately with each HIV risk behavior, and with all three-risk behaviors combined. The final model includes both independent variables. The variables of age, time homeless and depression were be incorporated into the logistic regression model, regardless of their alpha level. Adjusted odds ratios and 95% confidence intervals were calculated from the logistic regression coefficients to assess associations between the independent variables and the dependent variable. For univariate and logistic regression results, association with a p value of .05 or less was considered significant. In order to test how effective the logistic regression model was in describing the outcome of interest, HIV risk behavior, the Hosmer-Lemeshow goodness of fit test was be used (Hosmer & Lemeshow, 1980; Lemeshow & Hosmer, 1982).

Study Limitations

There are a number of limitations to this study. First, because the design is cross-sectional no causal conclusions can be made. Therefore, it will be impossible to say if unfair treatment and history of adult age violence came before the respondents became homeless or afterwards as a result of their homeless status. Secondly, as reported in the literature, the measure of perceived discrimination and unfair treatment has been primarily used in samples of working adults who also had health insurance (Krieger, 1989; Kneger & Sidney, 1996). This measure has not been validated in a homeless sample. Moreover, this measure among an entire sample of women who are homeless and living in poverty may not provide enough variability in the population's experiences of discrimination to establish a correlation. Third, at the time of the interview there may be self-reporting bias or recall bias. Thus, the incidence of violence, a sensitive issue, is likely to be under reported. And finally, this group of sheltered homeless women may not represent all homeless women in San Francisco. Although enumerating and taking a true random sample is impossible, studies (Zolopa et al., 1994) indicate that sampling from settings such as a shelter, provides a good representation of the target population.

CHAPTER 4

RESULTS

Sample Demographic Characteristics

Descriptive statistics were used to assess the demographic characteristics of the sample (*N* = 105). Frequency data pertaining to the demographic characteristics of the sample are presented in Table 4 (See Table 4). The mean age of study subjects was 41.2 years of age (*sd* = 10.6, range = 18 to 70 years). The mean age of the first time homeless for the study subjects was 36.3 years of age (*sd* 12.0, range 6 to 63 years of age when first homeless). On average, the total time subjects had ever been homeless were 33.2 months (*sd* 53.8, median 12 months, and range 0 to 354 months ever homeless). If the respondent were homeless for less than one month ever, they were entered as zero. Thirty days was the median total number of days which women had been in their current living situation, which was at one of the two homeless shelters.

The study subjects were predominantly White (40.8%) and African American (36.9%). Seventy-seven percent of the sample had graduated from high school. The majority of women received General Assistance (GA) as their primary source of income. For the question on sources of income, some respondents reported more than one primary source of income, with approximately ten percent reporting no primary source of income. A large number of the study sample (69.6%) reported some type of health insurance, however; approximately one third of the sample reported no insurance or medically indigent coverage. The majority of the sample (52.4%) reported having been in jail or prison at one time in their lives.

Table 4. Homeless Women in San Francisco: Demographic Variables N=105

Variable	Summary Value / Number (%)
Total Months Ever Been Homeless	33.2 (53.8 *sd*)
Mean, *sd*,	12 months median (range 0-354)
Median, range	
Age When First Homeless	36.2 (12.0 *sd*)
Mean, *sd*,	38 years median (range 6-63)
Median, range	
Age	41.2 (10.6 *sd*)
	42 years median (range 18-70)
Ethnicity	
White	42 (40.8%)
Black	38 (36.9%)
Other/Mixed Race	13 (12.6%)
Latino	5 (4.9%)
Native American	4 (3.9%)
Asian	1 (1.0%)
Missing	2
High School Graduate	
Yes	81 (77.1%)
No	24 (22.9%)
Sources of Income	
General Assistance (GA)	44 (41.9%)
Social Security Income (SSI)	34 (32.4%)
Other Sources of Income	17 (16.2%)
None	10 (9.5%)
Employment	8 (7.6%)
Social Security Retirement	7 (6.7%)
Social Security Disability (SSDI)	5 (4.8%)
Aid to Families w/Dependent Children (AFDC)	3 (2.9%)
Health Insurance	
Medicaid	41 (39.0%)
None	32 (30.4%)
Medicare	17 (16.2%)
Other	4 (3.8%)
Medically Indigent	3 (2.9%)
Veteran's	2 (1.9%)
Kaiser/other private	1 (1.0%)
Ever been in Jail or Prison	55 (52.4%)

Descriptive statistics were also used to present self-reported health related variables (See Table 5). The majority of the sample (71.5%) rated their health in general as good, very good or excellent. Study subjects reported being seen by a health care provider on average 10.5 times in the last twelve months; with four being the median number of times. Over half of the sample (57.7%) last received care at a clinic and 21.2% were last seen in an emergency room. A majority of the sample (63.8%) reported having been tested for tuberculosis within the last six months, while 50.5% of the subjects' reported having been HIV tested in the last twelve months. Over two-thirds of the sample reported that they had been tested for HIV at some time. The median year of the last HIV test was 1995. Thirty-one percent of the subjects reported being told by a health care provider that they had a sexually transmitted infection at some time.

Overall, women felt there were people in their life from whom they could get support. Over three-quarters (81.9%) of respondents identified at least one person who provided them with emotional support. Of those who provided emotional support, less than half were a member of their family of origin and the majority of support persons (79.2%) were women. In response to the question of how many emotional support persons stayed in the shelter with the respondent, about half (52.9%) responded "no one". The majority of women exhibited none to minimal depression as measured by the Beck Depression Inventory.

In addition to health status, social support, and mental health, women reported if they had certain physical conditions. Nearly one-third (28.6%) of the sample reported lung disease, for example asthma. Nineteen percent reported they had high blood pressure. Six women (5.7%) reported liver disease and diabetes. Only one woman reported she was HIV positive.

Table 5. Homeless Women in San Francisco: Health Related Variables N=105

Variable	**Summary Value**
Health Rating	
How would you rate your health in general	
Poor	13 (12.4%)
Fair	38 (36.2%)
Good	24 (22.9%)
Very Good	19 (18.1%)
Excellent	11 (10.5%)
Health Care Provider Visits	
Times Seen by Health Care Provider (HCP) in last 12 Months	10.5 (16.5 *sd*)
Told by HCP had Sexually Transmitted Infection	33 (31.4%)
TB Test in Last 6 Months	67 (63.8%)
HIV Test in Last 12 Months	53 (50.5%)
Ever Had an HIV Test	82 (78.1%)
Health Characteristics	
Number of people who could provide emotional support	
No one	19 (18.3%)
One person	23 (22.1%)
Two or Three People	33 (31.7%)
Four or Five People	12 (11.5%)
Six or more people	17 (16.3%)
Beck Depression Inventory Score	8.11 (5.5 *sd*)

Alcohol and drug use was also measured in this study (See Table 6). Nearly two-thirds (74%) of the women reported drug or alcohol problems. Among those who reported a problem with drugs or alcohol, 27% reported alcohol as being their main problem. Although 27% reported alcohol as their main problem 86.5% reported not drinking to intoxication in the last 30 days. The majority (66%) of respondents reported no use of any alcohol within the last thirty days, with only two respondents reporting daily use of alcohol.

Two-thirds of the sample report current or past alcohol or drug use. No women in this sample reported recent use of inhalants or hallucinogens, and very few, three and five percent respectively, reported any lifetime use of either drug. Twenty-six percent of respondents reported cocaine, which includes freebasing and crack use as being a problem for them.

In addition, the use of several other drugs was infrequently reported. Few women reported using heroin in the last thirty days (97% reported no recent heroin use) nor in their lifetime (16.5% reported some lifetime use of heroin). Two women reported they were on daily methadone maintenance at the time of data collection. Cocaine was the most reported drug used among this sample. In the past thirty days, 13% of respondents' report use, while lifetime use was reported by 41.5% percent of the sample. Amphetamine use was reported as 3% in the last thirty days and 15.5% reported use in their lifetime. Crack use and injection drug use was significantly correlated in this sample (Pearson correlation = . 37, $p < 0.01$).

Table 6. Homeless Women in San Francisco: Drug and Alcohol Use N=105

Variable	Number and Percent Reporting
Alcohol Abuse	28 (26.9%)
Injected Drugs	
Any lifetime regular use	19 (18.1%)
Crack/Cocaine	
Any lifetime regular use	37 (35.2%)

All respondents were asked about their sexual partners and condom use (SeeTable 7). The majority of women reported being sexually active in the last twelve months. Partners reported ranged from male main and casual partners to female main and casual partners. Women were not asked separately about receiving money, housing, or drugs in exchange for sex. However, women were asked if money for their drug use came from prostitution, and sixteen women (15.2%) responded yes. Not all women, who responded yes to having sex within the previous twelve months, responded to additional questions about the use of a condom or barrier with sexual partners.

A number of questions in the survey concerned women's sexual health care and sexually transmitted infections. Ninety-three percent of respondents reported having a Papinocalou (Pap) smear at some time in their life. Over half of the women (54.3%) reported a Pap smear with in the last year with a median time of eight months since having the test. Respondents also reported on whether a health care provider had informed them at some time that they had a sexually transmitted infection. Twenty-five percent reported gonorrhea, 11% chlamydia, 6% syphilis, and 3% reported herpes at some time in their life.

Table 7. Homeless Women in San Francisco: Sexual Behavior N=105

Variable	Summary Value
Age Became Sexually Active	16.7 (4.2 *sd*) range 8-32 years
Sexually Active in last 12 months	
Yes	65 (61.9%)
No	40 (38.1%)
Male **Main** Partner/ Condom Use Last 12 Months--All of the time	
Yes	2 (3.7%)
No	38 (72.3%)
Not Applicable*	13 (24.1%)
Male **Casual** Partners/Condom Use Last 12 Months--All of the time	
Yes	16 (59.3%)
No	6 (22.2%)
Not Applicable*	5 (18.5%)
Male Partner-**Main or Casual**/Condom Use Last 12 Months—All of the time	
Yes	
No	18 (17.1%)
Not Applicable*	55 (52.4%)
	32 (30.5%)
Female **Main** Partner/ Barrier Use Last 12 Months--All of the time	
Yes	1 (1.9%)
No	10 (18.6%)
Not Applicable*	43 (79.6%)
Female **Casual** Partners/ Barrier Use Last 12 Months--All of the time	
Yes	4 (14.8%)
No	2 (7.4%)
Not Applicable*	21 (77.8%)
Female Partners **Main-Casual**/Barrier Use Last 12 Months—All of the time	
Yes	0
No	5 (4.8%)
Not Applicable*	48 (45.7%)

* Of those reporting sex in last 12 months who have Main or Casual Partner
Not all respondents who reported sex in last twelve months answered question about condom or barrier use

One of the two main predictor variables, the report of violence, is presented in Table 8 (SeeTable 8). In addition to being asked about whether they had been physically harmed, women were asked if they were taken to a physician or sought medical care. For women reporting physical harm as a child by a family member, 12.8% reported being taken to the doctor. For women who reported physical harm by a partner, 62.1% reported they had sought medical care. For women reported physical harm by a stranger, 60% reported seeking medical care.

Table 8. Homeless Women in San Francisco: Number and Percent of Women Reporting Personal Experience of Violence N=105

Variable	Summary Value
Physical harm as a child by a family member	47 (45.2%)
Physical harm by a partner	66 (62.9%)
Physical harm by a stranger	63 (60.0%)
Experienced Any Violence	
Yes	88 (83.8%)
No	17 (16.2%)
Age when first harmed	7.70 mean (4.2 *sd*) median 7, range 1-17 years old

Preliminary Analyses

Descriptive statistics suggested that many of the women reported the outcome, HIV risk behavior (sex without a condom or barrier, any lifetime injection drug use, any lifetime crack cocaine use). The variables of interest, unfair treatment and experience of violence were tested separately with each HIV risk behavior. In addition, the three outcome behaviors (sex without a condom or barrier, any lifetime injection drug use, any lifetime crack cocaine use) were collapsed to form a dichotomous variable which measured any HIV risk behavior (yes, no) among subjects.

Women who answered the questions of unfair treatment and perceived discrimination comprised a sub-sample of women who were enrolled in the study

(84 of 105). A grouping variable was created to determine if there were significant differences between those subjects who initially enrolled in the study and those subjects who returned for a second or third study visit and who therefore answered the perceived discrimination and unfair treatment questions. A series of independent samples *t* test indicated no significant differences between subjects who responded to the measure of unfair treatment and perceived discrimination and those who did not for time homeless, age, age when first homeless, age when became sexually active, times seen by health care provider in last 12 months, and depression. Chi-square analyses yielded no significant differences between the two samples for ethnicity, education, sources of income, number of social support persons, incarceration, use of alcohol, and having an HIV test in the last year (See Table 9). The difference between subjects was also tested for the outcome measures of HIV risk (See Table 10) and for the other variable of interest violence (See Table 11). No significant difference was found between subjects on any measures.

Table 9. Homeless Women in San Francisco: Selected Sociodemographics and Health Characteristics, Those Who Participated in Discrimination/Unfair Treatment Question Compared to Those Who Did Not Participate in Discrimination/Unfair Treatment Questions

Characteristic	Answered Discrimination/ Unfair Treatment Questions N=84 Summary Value	Did Not Answer Discrimination/Unfair Treatment Questions N=21 Summary Value	P Value
Time Homeless (Total # of Months)	31.72 (46.1)	39.13 (78.6)	.575
Age	41.62 (10.4)	39.43 (11.2)	.399
Age When First Homeless	36.49 (12.2)	35.35 (11.7)	.657
Age Became Sexually Active	16.99 (4.4)	17.00 (3.6)	.715
Ethnicity	Black 29 (34.5%)	9 (42.8%)	.594
	White 34 (40.5%)	8 (38.0%)	
	Other 20 (23.8)	3 (14.2%)	
Education			
High School Graduate	64 (76.2%)	17 (80.9%)	.642
Sources of Income			
Social Security Retirement	5 (6.0%)	2 (9.5%)	.557
Social Security Disability (SSDI)	3 (3.6%)	2 (9.5%)	.252
Social Security Income (SSI)	29 (34.5%)	5 (23.8%)	.348
General Assistance	35 (41.7%)	9 (42.9%)	.921
Health Insurance			
None	48 (57.1%)	10 (47.6%)	
Some	36 (42.9%)	11 (52.4%)	.432
Times Seen by HCP in last 12 Months	11.21 (16.9)	7.90 (14.6)	.416
HIV Test in the Last Year	42 (50%)*	11 (52.4%)	.884
Beck Depression Inventory	8.19 (5.9)	7.80 (6.2)	.789
Alcohol Abuse	42 (50.6%)*	8 (38.1%)	.305
Number of people who could provide emotional support			
None or one	35 (41.7%)	7 (33.3%)	
Two or more	48 (57.1%)	14 (66.7%)	.461
Ever Been in Jail or Prison	46 (54.8%)	9 (42.9%)	.329

Table 10. Homeless Women in San Francisco: Outcome Variables, Those Who Participated in Discrimination/Unfair Treatment Question Compared to Those Who Did Not Participate in Discrimination/Unfair Treatment Questions

Characteristic	Answered Discrimination/ Unfair Treatment Questions N=84 Summary Value	Did Not Answer Discrimination/Unfair Treatment Questions N=21 Summary Value	P Value
Sex without a condom	32 (46.4%)	9 (38.0%)	.824
Used Crack – any lifetime regular use	30 (35.7%)	7 (33.3%)	.810
Injected Drugs – Any lifetime use	17 (20.2%)	2 (9.5%)	.246

Table 11. Homeless Women in San Francisco: Experience of Violence, Those Who Participated in Discrimination/Unfair Treatment Question Compared to Those Who Did Not Participate in Discrimination/Unfair Treatment Questions

Characteristic	Answered Discrimination/ Unfair Treatment Questions N=84 Summary Value	Did Not Answer Discrimination/Unfair Treatment Questions N=21 Summary Value	P Value
Physical harm by a family member as a child	41 (49.4%)	6 (28.6%)	.087
Physical harm by a partner	55 (65.5%)	11 (52.4%)	.267
Physical harm by a stranger	50 (59.5%)	13 (61.9%)	.842
Experienced Any Violence			
Yes	72 (85.7%)	16 (76.2%)	.289
Age when first harmed	7.90 (4.17)	6.20 (5.02)	.406

Analysis of Research Questions

The primary purpose of this study was to examine the relationship between measures of the social environment and behavioral risk for HIV infection in a sample of homeless women. There were seven research questions posed to address this aim.

Research Question 1: Who are the women in this sample, what is their social, demographic and health characteristics?

Social, demographic and health characteristics of the sample are presented in Tables 4 and 5 (See Table 4 and 5). Overall, the women in this sample tended to be older (mean 41.2 years old), and had been homeless on average, over two years at the time of data collection. The sample was primarily White and African American, and the majority had a high school education. Although one third of the sample did not report having health insurance, on average women reported seeing a health care provider ten times in the past year.

Research Question 2: How does this sample of women compare to a national sample on the measure of health status?

Women were asked to rate their health as fair, poor, good or excellent. This measure of perceived health status in this study has been used widely in health science research. Thus, the response to this measure among homeless women in San Francisco was able to be compared to a national sample collected as part of the National Health Interview Survey (NHIS) (Benson & Marano, 1998). The number and percent of homeless women in San Francisco were compared to the group reporting a family income of less than $10,000 a year in the NHIS. Homeless women in this sample reported significantly worse health status than the national sample (See Table 12).

Table 12. Homeless Women in San Francisco: Health Status (Poor or Fair), Compared to Women in Lowest Economic Strata of National Health Interview Survey

Characteristic	San Francisco Sample Homeless Women N=105	National Health Interview Survey Households in Lowest Economic Strata 1995 N = 21,651
Health Rating		
Poor	12.4%	7.7%
Fair	36.2%	15.1%
Good	22.9%	28.3%
Very Good	18.1%	25.8%
Excellent	10.5%	23.0%

chi-square 44.5, df 4, p value = .000

Research Question 3: What proportion report unfair treatment in this sample, and in what situations do women report perceived discrimination?

Over 95% of the sample reported unfair treatment (SeeTable 13). The majority of women (63.3%) try to do something about the unfair treatment, and over half (53%) say they talk to another person about being treated unfairly. The number and percent of women reporting perceived discrimination is also presented in Table 10 (See Table 13). The most frequently occurring situations where discrimination is perceived include on the street or in a public setting, getting a job, and getting medical care. Moreover, when specifically asked about situations where they may have experienced discrimination, the most frequent responses are based on gender, socioeconomic position, and race or color.

However, some women reported perceived discrimination in every category in which they were asked about.

Table 13. Homeless Women in San Francisco: Perception of Unfair Treatment and Perceived Discrimination N=84

Variable	**N (%)**
Unfair Treatment	
If you feel you have been treated unfairly, do you usually:	23 (21.9%)
Accept it as a fact of life	56 (63.3%)
Try to do something about it	4 (3.8%)
Not applicable	
If you have been treated unfairly, do you usually:	
Talk to other people about it	55 (52.4%)
Keep it to yourself	24 (22.9%)
Not applicable	3 (2.9%)
Perceived Discrimination	
Experienced Discrimination Because of **Gender** in Following Situations:	
Getting medical care	10 (9.5%)
Getting testing and counseling for HIV	3 (2.9%)
Getting testing and counseling for STD's	7 (6.7%)
On the street or in public setting	37 (35.2%)
Getting a job	25 (23.8%)
Experienced Discrimination Because of **Socioeconomic position or Social Class** in Following Situations:	
Getting medical care	23 (21.9%)
Getting testing and counseling for HIV	6 (5.7%)
Getting testing and counseling for STD's	7 (6.7%)
On the street or in public setting	30 (28.6%)
Getting a job	27 (25.7%)
Experienced Discrimination Because of **Race or Color** in Following Situations:	
Getting medical care	6 (5.7%)
Getting testing and counseling for HIV	3 (2.9%)
Getting testing and counseling for STD's	3 (2.9%)
On the street or in public setting	29 (27.6%)
Getting a job	14 (13.3%)
Experienced Discrimination Because of **Sexual Preference** in Following Situations:	
Getting medical care	7 (6.7%)
Getting testing and counseling for HIV	4 (3.8%)
Getting testing and counseling for STD's	8 (7.6%)
On the street or in public setting	9 (8.6%)
Getting a job	9 (8.6%)
Experienced Discrimination Because of **Drug Use** in Following Situations:	
Getting medical care	12 (11.4%)
Getting testing and counseling for HIV	3 (2.9%)
Getting testing and counseling for STD's	4 (3.8%)
On the street or in public setting	18 (7.1%)
Getting a job	14 (13.3%)

Research Question 4: Are there racial or ethnic differences between women for the variables of interest, unfair treatment and violence, and HIV risk outcome variables?

Chi-square analyses of racial differences were not possible because of small numbers. Therefore, race was collapsed to a trichotomous variable of Black, White, and Other (Latinos, Asians, and Native Americans). Significantly more Blacks reported lifetime use of crack in Table 14 (See Table 14), but no other variables were significantly different by race. After collapsing race, chi-square analysis continued to reveal a number of cells with less than five individuals for the measurement of perceived discrimination. However, the trend for perceived discrimination does not show racial differences in the majority of categories asked about. More people of color in some categories report perceived discrimination on the basis of race or color. These categories include: getting medical care - Blacks 3 (10.3%), Whites 1 (2.9%), and Other 1 (5%) ; on the street or in a public setting – Blacks 9 (31.0%), Whites 12 (35.3%), and Other 8 (40.0%); and getting testing and counseling for HIV – Blacks 2 (6.9%), Whites and Other none.

Table 14. Homeless Women in San Francisco: Racial Differences in Predictor and Outcome Variables

Characteristic	Black	White	Other	Chi-Square	P Value
Predictors					
Unfair Treatment	4(10.5%)	6 (14.3%)	3 (13.0%)	1.93	.983
Experienced Violence	32 (84.2%)	35 (83.3%)	20 (87.0%)	0.15	.927
Outcomes					
Injection Drug Use	9 (23.7%)	6 (14.6%)	4 (17.4%)	1.09	.578
Sex without a Condom or Barrier	21 (91.3%)	12 (63.1%)	8 (72.7%)	4.87	.087
Used Crack	23 (60.5%)	6 (14.6%)	8 (34.8%)	17.99	.000

Research Question 5: What HIV risk behavior do women report?

The most frequently reported HIV risk behavior in this sample was sex in the last twelve months without a condom or barrier, followed by crack use and finally injection drug use (SeeTable 15). All three categories were collapsed into a dichotomous variable of any HIV risk (yes, no). Close to half of the sample (46.7%) reported any HIV risk behavior.

Table 15: Homeless Women in San Francisco (N=105) Reporting HIV Risk Behavior.

HIV Risk Behavior	N%
Condom or Barrier Use	
Did not use Condoms w/Male Sexual Partners All of the time – Last 12 Months	41 (39.0%)
Injected Drugs	
Any lifetime regular use	19 (18.1%)
Crack/Cocaine	
Any lifetime regular use	37 (35.2%)
Any HIV Risk Behavior	49 (46.7%)

Research Question 6: Is there a difference in HIV risk behavior between women who report a history of violence and those who do not?

Prior to entering variables into the logistic regression model, the association between the outcome variables and the covariates of age, time homeless and depression were tested individually (SeeTable 16). Utilizing independent *t* tests for mean differences between those who reported the selected outcome and those without the outcome, differences were found in age and depression score. Women who reported any lifetime IDU had a higher score on the BDI indicating they were more depressed (p = .006). Women who reported some lifetime crack use were significantly younger than those who did not report crack use (p = .004). In addition, those women who reported crack use scored significantly higher on the BDI. Mean time homeless was not significantly different for any HIV risk factor. However, women who reported unsafe sex in the last 12 months with either casual or main partners reported a longer time homeless than women who did not report unsafe sex (37.7 months homeless vs. 15.9 months). All three covariates were entered into the logistic regression models.

Table 16: Homeless Women in San Francisco: Selected Covariates Examined Against HIV Risk Outcome Measures.

Characteristic	Any Lifetime Injection Drug use		P Value
	Yes Mean (sd)	No Mean (sd)	P Value
Age	40.4 (8.3) years	41.5 years (11.47)	.661
Time Homeless	33.1 months (58.2)	35.2 months (29.7)	.874
Depression	11.5 BDI Score (6.9)	7.3 BDI Score (5.5)	.006
	Any Lifetime Crack Cocaine Use		
	Yes Mean (sd)	No Mean (sd)	P Value
Age	37.3 years (7.0)	43.5 years (11.5)	.004
Time Homeless	32.5 months (50.0)	35.1 months (60.9)	.817
Depression	10.0 BDI Score (5.3)	7.0 BDI Score (7.3)	.014
	Sex without a Condom or Barrier		
	Yes Mean (sd)	No Mean (sd)	P Value
Age	39.1 years (9.8)	41.8 years (8.1)	.393
Time Homeless	37.7 months (66.3)	15.9 months (18.7)	.270
Depression	9.1 BDI Score (6.2)	10.7 BDI Score (5.3)	.414

History of violence was not associated with any lifetime injection drug use in this sample when controlling for age, depression, and time homeless (See Table 17). However, women who reported more symptoms of depression on the measure of depression symptoms were 10% more likely to have used injection drugs than those who had a lower score on the Beck Depression Inventory (OR = 1.1). While women reporting a history of violence were 2.74 times as likely to report injection drug use, this was not statistically significant in logistic regression analyses. The wide confidence interval (.32 – 23.50) may indicate low power or variability in the sample. Age and time homeless did not predict injection drug use.

Table 17: Experience of Violence among Homeless Women by HIV Risk Factor – *Injection Drug Use*, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Violence	2.74	.32 – 23.50	0.3564
Age	.99	.95 – 1.05	0.8232
Depression	1.11	1.02 – 1.21	0.0173
Time Homeless	.99	.98 – 1.00	0.6096

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 2.5985, 8df, p = .9570

Similarly, the HIV risk behavior of sex without a condom or barrier was not associated with a history of violence when controlling for age, depression, and time homeless (p = 0.6914) (See Table 18).

Table 18: Experience of Violence among Homeless Women by HIV Risk Factor - *Sex without a Condom or Barrier*, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Violence	.62	.06 – 6.64	0.6914
Age	.96	.89 – 1.03	0.2871
Depression	.94	.84 – 1.05	0.2548
Time Homeless	1.02	.99 – 1.06	0.1696

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 7.0441, 8df, p = .5319

And also, the HIV risk outcome behavior of any lifetime crack use was not associated with a history of violence when controlling for age, depression, and time homeless (See Table 19). However, women who were younger were 94% as likely to have used crack in their lifetime as women who were older (p = 0.02011).

Table 19: Experience of Violence among Homeless Women by HIV Risk Factor - *Crack Use*, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Violence	6.56	.76 – 56.67	0.0875
Age	.94	.89 - .99	0.0273
Depression	.97	.87 – 1.08	0.6404
Time Homeless	.99	.98 – 1.01	0.3620

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 7.4682, 8df, p = .4871

After combining all HIV risk factors into one dichotomous variable, history of violence was tested as a predictor while controlling for age, depression, and time homeless. In this sample, the experience of violence was not associated with any HIV risk behavior (See Table 20).

Table 20: Experience of Violence among Homeless Women by Any HIV Risk Factor, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Violence	2.49	.20 – 30.89	0.4760
Age	1.01	.91 – 1.92	0.8611
Depression	.96	.82 – 1.12	0.5782
Time Homeless	1.05	.97 – 1.13	0.2664

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 3.7705, 8df, p = .8772

Research Question 7: Is there a difference in HIV risk behavior between women who report unfair treatment and perceived discrimination and those who do not?

As described in Chapter 3, the variable of interest unfair treatment was collapsed into a dichotomous variable, which indicates a passive or active response to unfair treatment. Only 14 women in this sample reported a passive response to unfair treatment, which was the predictor variable for unfair treatment (yes, no). Nonetheless logistic regressions were run with each outcome variable. The Hosmer-Lemeshow goodness-of-fit test indicated that the models were a good fit. This variable was then entered into a logistic regression model to test for the likelihood that perceived unfair treatment was associated with HIV risk.

In addition, HIV risk behaviors were examined among those who reported perceived discrimination. Chi Square analyses were done for each type of perceived discrimination, for example 'have you ever experienced discrimination...because of your gender, race or color, socioeconomic position, etc. and for each situation. No significant differences were found for any experience of discrimination and HIV risk behavior. The trend of responses indicates that women who report perceived discrimination also report more HIV risk behavior, however, the small sample size of those who answered the perceived discrimination questions prohibits adequate statistical testing.

Similarly, as in the previous analysis, these data suggest that when controlling for age and time homeless, women who had a higher score of depression had a risk of any lifetime injection drug use 1.15 times that of women who had lower scores of depression (p = 0.0091) (See Table 21).

Table 21: Unfair Treatment among Homeless Women by HIV Risk Factor – *Injection Drug Use*, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Unfair Treatment	1.15	.27 – 4.90	0.8533
Age	.99	.94 – 1.05	0.7962
Depression	1.12	1.03 – 1.22	0.0091
Time Homeless	.99	.98 – 1.01	0.6486

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 5.1687, 8df, p = .7394

Passive response to unfair treatment accounted for 21% of the variance among women who reported sex without a condom or barrier, in this sample (See Table 22). Women reporting a passive response to unfair treatment were less likely to report sex without a condom (p = 0.0335).

Table 22: Unfair Treatment among Homeless Women by HIV Risk Factor – *Sex without a Condom or Barrier*, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Unfair Treatment	.09	.01 - .83	0.0335
Age	.98	.90 – 1.06	0.5964
Depression	.95	.84 – 1.07	0.3873
Time Homeless	1.01	.99 – 1.04	0.1969

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 9.480, 8df, p = 2.759

Further, these data suggest that younger women had less risk (or = .94) for crack use compared with older women (p = 0.0086). Women who had higher scores of depression had a lifetime history of crack use 1.09 times that of women who had lower scores of depression (See Table 23). However, unfair treatment did not predict lifetime use of crack in this sample.

Table 23: Unfair Treatment among Homeless Women by HIV Risk Factor – *Use of Crack*, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Unfair Treatment	.73	.19 – 2.73	0.6463
Age	.94	.90 – .98	0.0086
Depression	1.09	1.01 – 1.17	0.0218
Time Homeless	.99	.99 – 1.01	0.7241

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 9.8480, 8df, p = .2759

Research Question 8: Is there a difference in HIV risk behavior between women who report one variable of interest, the experience of violence, while controlling for the other variable of interest, unfair treatment?

In the final model, violence does not predict HIV risk behavior, when controlling for unfair treatment, age, depression, and time homeless (See Table 24). Thus, these data indicate that homeless women who experienced violence did not have an increased likelihood of reporting HIV risk behavior. Nonetheless, women reporting a history of violence were 2.48 times as likely to report any HIV risk, this was not statistically significant in logistic regression analyses. Passive response to unfair treatment, age, time homeless and depression do not explain any of the variability in the report of the outcome variable, any HIV risk behavior.

Table 24 Unfair Treatment among Homeless Women by All HIV Risk Factors, San Francisco by Logistic Regression.

Characteristic	*Odds Ratio*	*95%Confidence Interval*	*P Value*
Violence	2.48	.19 –31.05	0.4800
Unfair Treatment	.94	.07 – 12.50	0.9647
Age	1.01	.90 –1.03	0.8570
Depression	.96	.81 – 1.12	.5917
Time Homeless	1.05	.96 – 1.13	.2836

Hosemer & Lemeshow *Goodness-of-fit test* Chi-square 8.7212, 8df, p = .3664

CHAPTER 5

DISCUSSION

Behavior is associated with rates of HIV infection (CDC, 1998), and social conditions such as violence have been linked to HIV risk behavior (Paul, Catania, Pollack & Stall, 1999; Zierler, Witbeck & Meyer, 1997, Irwin, et al., 1995). This study asked the question of the association between social condition variables, (violence, unfair treatment, and perceived discrimination) and HIV risk behaviors in a sample of sheltered homeless women in San Francisco. I examined the likely contributors to HIV risk, such as time homeless, age, and depression. Those women who were younger were more likely to report use of crack cocaine. In addition, women who reported more symptoms of depression were more likely to report use of crack cocaine and injection drug use. Time homeless was not significantly associated with the report of HIV risk behavior. When controlling for the effects of these possible contributors to HIV risk behavior, violence was not significantly associated with any of these factors, however, a passive response to unfair treatment was protective for sex without a condom or barrier.

Explanations of these findings are various. A passive response to unfair treatment may indicate homeless women are more likely to use condoms with sex partners. This may also be a spurious finding. Additionally, the prevalence of violence is so high in this sample it may not be a distinguishing variable for those who have reported any HIV risk behavior. In each logistic model a history of violence was consistently associated with an excess of risk behavior (for injection drug and crack use), although the association was not statistically significant.

These data are cross-sectional, and therefore the associations can not be linked causally. Limitations of this study include the potential biases in self-report of risk behaviors and perception of unfair treatment, and construct validity. Study limitations will be discussed more fully in a later section, however, self-report of sexual behavior and drug use have been shown to be reliable (Catania, Gibson, Chitwood, & Coates, 1990; Booth et al., 1996; Magura et al., 1987; Maisto et al., 1990). Moreover, data from homeless persons have been shown to be as reliable as that from subjects in other settings (Annis, 1979; Shanks, 1981).

Another important issue is the sampling methodology and the representativeness of the sample in this study. The sampling method used in this study was a random sample of those women staying in homeless shelters at the time of data collection. The social and demographic characteristics of this sample did not differ greatly from other homeless sample reported in the literature (White, Tulsky, Dawson, Zolopa & Moss, 1997; Robertson & Cousineau, 1986; Hibbs, 1994). Nonetheless, one likely explanation for these findings is the study's small sample size. Another may be underrepresentation, despite random selection, of women who are engaging in HIV risk behaviors under study.

Characteristics of Homeless Women

Ethnic distributions in this study did not differ greatly from others who have studied homeless women (Zolopa et al, 1994; Breakey et al, 1989; Fisher, Hovell, Hofstetter & Hough, 1995). Both St. Lawrence and Brasfield's (1995) and Browne and Bassuk's (1997) sample had a higher proportion of African Americans, and Puerto Ricans respectively but this may be due to study setting, which was the South and Eastern part of the country. Hovell, Hofstetter and Hough's (1995) sample included a higher proportion of White women, this difference could be due to the sampling method, which included a convenience sample of all women who were staying in shelters hat may have been nonrepresentative of the entire homeless population of San Diego. The mean age of this sample was older than Hovell et al (1995) and Browne and Bassuk's (1997) study sample. Over half of the study subjects had been in jail, which was less than Breakey (1989) and Zolopa (1994) found. On average, subjects in this study had completed a high school education or its equivalent, which is in agreement with other research with a homeless sample (Zolopa et al, 1994; Hovell, Hofstetter & Hough, 1995; Browne & Bassuk, 1997).

Health Related Characteristics.

Nearly one half of the homeless women in this study reported poor or fair health status. By contrast, Gelberg, Linn and Mayer-Oaks (1990) in their community based sample of 529 homeless adults found that 21% reported poor or fair health status. While White et al (1997) in their study of 2780 homeless adults found over one third reported fair or poor health status. Similar to those findings, Robertson and Cousineau (1993) found that among homeless surveyed over one third rated their health status as fair or poor. The groups that are being compared in these studies are similar in terms of socioeconomic characteristics. However, the differences between these studies and mine may be because this sample is comprised solely of women, and women have been known to report worse health status when compared to men (Stewart, Hayes, & Ware, 1988). As well, the results of this study compared to other studies that collected data on health status may be skewed due to the small sample size. Gelberg's sample was selected from homeless at a health clinic, which may relate to report of health status in that sample.

Health conditions among the homeless are difficult to compare across studies due to the difference in methodologies used to elicit information on health problems. In this study health conditions were obtained by asking subjects about a number of physical conditions. Only one in this study reported herself as HIV positive. This is different from studies of HIV seroprevalence in the homeless, which consistently report higher rates of HIV than in the general population. In other studies of the homeless population in San Francisco, Zolopa et al (1990) found that homeless adults had a seroprevalence rate ten times higher than a comparison group of adults who were not homeless. Anonymous testing of 162 people in a clinic affiliated with a soup kitchen and shelter for the homeless yielded a 21% HIV seroprevalence rate (Office of the Mayor, 1989). In another study of HIV rates among adults and homeless youth, HIV rates for women at three different sites in San Francisco range from 0.2-2.9 (Allen et al, 1994). The finding that only one woman in this sample reported she was HIV positive, when one would expect to find 4 to 20 women out of 105 homeless women to be HIV positive, may be due to a number of reasons. First, HIV in this sample may be underreported because HIV status was not confirmed with a serum sample. Second, women may unknowingly be HIV infected, or if knowingly HIV positive, fear disclosing their HIV status. Another reason may be that the number of HIV infected among this sample may be low due to the corresponding low report of HIV risk behavior. This sample may represent a group of homeless women who are not affected by HIV in the same way that similar groups of homeless in San Francisco are.

Comparison with the US Population

The homeless women in this study consider their health to be poorer than people in the general US population. Health status data from the National Health Interview Survey in 1995 indicate that 9.2% of women between the ages of 25 and 44 rate their health poor or fair, while 17.6% of women between the ages of 45 and 64 rate their health fair or poor (Benson & Marano, 1998). In the poorest family income strata, under $10,000 a year for all ages, 22.8% reported poor or fair health, with a range from 7.4% to 40.6% for those aged 18 and older. This data most closely resembles the findings from this study, which found 48.8% of women reported their health status to be fair or poor.

HIV Risk Behavior

This study documented HIV risk behavior among a sample of sheltered homeless women in an HIV epicenter city. Nearly half of the sample (46.7%) reported at least one HIV risk behavior. Forty-one percent reported sex without a condom or barrier, 18% any lifetime intravenous drug use, and 35.2% any lifetime crack cocaine use. Comparisons of HIV risk behavior among homeless women is difficult to make for several reasons. First, there are few studies that exclusively study homeless women or report results from their sample of women separately. And secondly, the definitions of HIV risk behavior vary from study to study.

Compared to Fisher et al (1995) more women in this sample reported both crack use - 21% , and heroin – 7%. One reason for this difference is that Fisher asked about drug use in the last month and last year, while this study asked about any regular lifetime drug use. Fisher et al (1995) included alcohol abuse as a risk factor for HIV infection. Although this study did not conceptualize alcohol abuse as an HIV risk factor, the findings (26.9% reporting alcohol abuse) are similar to Fisher who found 30% of women reporting alcohol abuse and Beakey et al (1989) who reported 32% alcohol abuse in a sample of homeless women.

Allen et al (1994) found 1.4% women reporting injection drug use compared to a sample in New York city of adults attending homeless sites where 11.7% reported injection drug use. Irwin et al (1995) found 18.5% of rape survivors had ever injected drugs and 11.7% of controls had ever injected. In the same study, Allen (1994) reported that 86.8% of rape survivors and 56.7% of the control group had smoked crack at some time in their life. Among this sample of homeless women 35.2% reported any lifetime regular use of crack cocaine. This finding is similar to what St. Lawrence and Brasfield (1995) found, which was 41% reporting crack use. One of the reasons Irwin's proportion of crack use is higher may be due to sampling strategy. Irwin's (1995) sample was recruited from drug treatment centers and criminal justice sites where it is likely that the population would report more drug use.

Racial and ethnic differences among women who reported any lifetime use of crack differed significantly in this study (p = 0.00). Black women reported a higher proportion of crack use (60.5%) than women who were in the Other (mixed race, Latina, Native American and Asian) (34.8%) or White (14.6%) ethnic categories. Among women reporting injection drug use, Black women reported higher proportions of injection drug use (23.7%) compared to Other (17.4%) and White (14.6%) women. Although the proportions of women who used drugs are smaller than rates reported in other studies, racial differences in the report of drug use are consistent with other findings. Nyamathi et al (1995) found crack use among 96% of the African American, 2.5% of Latina, and 1.7% of White women in their sample of homeless women. The higher proportions can be attributed to their sampling strategy which was directed primarily at minority women at risk for HIV infection in Los Angeles, who were residents of homeless shelters, and drug recovery programs.

In the area of sexual risk behavior, Irwin (1995) results indicate that 85.4% of rape survivors reported sexual risk behavior, while her control group reported sexual risk behavior 49.5% of the time. In another study of women drug users, 74.6% reported sex without a condom or barrier in the previous thirty days (Stevens, Estrada, Estrada, 1998). And, Fisher (1995) reported 22% of partners of homeless women always used condoms. The findings of this study vary from reports in the literature. For women who reported sex with a male main partner only 3.7% reported condom use all of the time, while 17.1% of women with casual male partners reported using condoms all of the time. And, 39% of women reported any sexual risk behavior. Compared to Fisher (1995), Irwin (1996) and Stevens (1998) a smaller proportion of women in this study reported sexual risk behavior. This difference may be the result of the difference in samples. Irwin and Steven's samples did not consist solely of homeless women, but of poor women who were drug users. Alcohol and drug use has been associated with HIV sexual risk behavior among poor women (Logan, Leukefeld, & Farabee, 1998; Nyamathi, Bennett & Leake, 1995). Another possible reason that this sample reported less drug use and sexual risk behavior may be due to the fact they were staying in shelters which have policies which restrict drug and alcohol use and routinely segregate clients based on gender.

Violence

In this study, 88 of 105 homeless women living in shelters reported experiencing violence at some point in their life. The majority of women reported physical harm by a partner (62.9%), followed by physical harm by a stranger

(60.0%), with nearly half of the women (45.2%) reporting physical harm by a family member as a child. In addition to the large proportion of women who report a history of violence, the association of violence with HIV risk behavior in this sample is similar to other studies in the literature.

Numerous studies have linked child sexual abuse to substance abuse, running away, and sexual risk taking including prostitution (Allers, Benjack, White, & Rousey, 1993; Paul, Catania, Pollack & Stall, 1999). Moreover, Irwin et al (1995) in their study of crack cocaine users found that women who reported recent rape had a higher prevalence of HIV infection compared with women who did not report rape. The findings in this study are similar to other studies; the proportion of homeless women reporting a history of violence (83.8%) is particularly high.

Unfair Treatment and Perceived Discrimination

As well, the findings of this study suggest that more than 95% of the women feel they have been treated unfairly at some time in their lives, with women reporting perceived discrimination in a number of situations including getting medical care and getting testing and counseling for HIV and STDs. The proportion of women who reported discrimination when getting medical care ranged from 5.7% because of their race or color to 21.9% because of their socioeconomic position or social class. In addition, 11.4% of women perceived discrimination because of their drug use. The finding of discrimination in any setting in society is troubling, however, the fact that women report being discriminated against in health care settings has implications for the delivery of

care as well as the study of unequal distribution of outcomes of care for all health problems, including AIDS.

This area of study among homeless and poor women is small, however, these findings can be compared to the work of Krieger (1990) who originally developed these questions and utilized them in a study of blood pressure and racial discrimination. In her sample of women, 8% of White women and 14% of Black women reported gender-biased treatment getting medical care. Compared to this study which found women report gender based discrimination 9.5% of the time when getting medical care. Among her sample 25.5% of Black women reported racial discrimination when getting medical care and no White women reported racial discrimination when getting medical care in her study. Her finding of racial differences in discrimination is different from what was found in this study. On examination of the data from this study, there were also racial differences when getting medical care. The proportion who reported discrimination when getting medical care included - Blacks 3 (10.3%), Whites 1 (2.9%), and Other 1 (5%). However, the numbers were too small to detect a statistical difference. Clearly, the study of discrimination must be replicated with a larger sample.

Study Limitations

The findings of this study are limited by threat to construct validity, statistical conclusion validity, internal validity, and external validity. Construct validity concerns the ability to make inferences about constructs based on the fit between operational and conceptual definitions (Cook & Campbell, 1979).

Statistical conclusion validity is related to issues concerning the statistical power of a study to detect an effect of a given magnitude with the sample size at hand at a specified alpha level (Cook & Campbell, 1979). External validity refers to the ability to generalize the findings of a study to and across populations of persons, settings, and times (Cook & Campbell, 1979).

The concept of perceived discrimination and unfair treatment may have been a threat to construct validity. It is likely that the measures of perceived discrimination and unfair treatment that were used in this study did not contain all possible experiences of discrimination and unfair treatment that homeless women may have experienced. However, this measure is one of the few published measures which asks respondents questions pertaining to their experience of racial, gender, and social class discrimination and their response to unfair treatment (Krieger, 1989). Much of the reported literature in this area focuses on beliefs and attitudes toward race, gender, and social class discrimination, because people are more likely to acknowledge discrimination at a group level as opposed to a personal level (Campbell & Schuman, 1969; Schuman & Hatchett, 1974; Schuman, Steeh & Bobo, 1985, Beeghley, 1984; Klein, 1984; Williams, 1995, Krieger, 1989). The absence of survey data which directly addresses the experience or perception of race, socioeconomic, gender, sexual orientation, and identification as a drug user- biased treatment makes it unclear if the responses reported in this study are representative of homeless women. This concept may benefit from more qualitative work on this topic with homeless individuals.

The primary threat to the statistical conclusion validity of this study was low statistical power. Low statistical power was a particular concern for the measures of HIV risk. The sample size was lower than the sample size necessary to detect large differences in HIV risk behavior (Cohen, 1988). Low statistical power may also have been a factor in the logistic regression analyses. When sample sizes are small, the probability of making a Type II error increases (Cook & Campbell, 1979). Consistent evidence of the contribution of history of violence to HIV risk behavior is important, despite the lack of statistical power, and should be investigated further. Evidence of association between perceived discrimination and HIV risk behavior is more equivocal, and further work may determine the role of this variable on HIV risk.

The respondents in this study were all staying in a homeless shelter at the time of data collection. It is possible that due to the requirements of staying in a shelter, for example prohibition of drug use, the report of crack cocaine use and injection drug use may have been underreported. Thus, the proportion of women reporting lifetime use of injection drugs or crack may not be generalizable to other homeless or low-income women who are not staying in shelters or group housing with policies which restrict drug use. This threat to external validity also means that the proportion of HIV risk behaviors in this sample may have been artificially small which affected the results of this study.

Implications of the Study and Directions for Research

The study illustrates the large number of homeless women who report violence, perceived discrimination and unfair treatment. Furthermore, the findings have implications for homeless women, providers, and for the larger health care system and policy makers.

The prevalence of violence and unfair treatment among homeless women is overwhelming. In this study, 83.8% of women reported a history of violence and over 95% felt they had been treated unfairly. Moreover, women perceived discrimination in many different settings. Of most concern to nurses and other health care providers women consistently reported discrimination while getting medical care. The largest proportions of women reported discrimination when getting medical care because of their social class (21.9%) and because they used drugs (11.4). This is an important finding and one, which must be addressed in all aspects of health care delivery, but especially when it comes to health care for poor women and women who are drug users.

The training of health care practitioners must undergo a political shift to create policies, at every level, which do not tolerate discrimination in medical care. This policy change needs to occur now. The current emphasis on culturally competent care is not creating the changes that need to occur in the delivery of health care. This may be due in part to the narrow definition of what defines culturally competent care, and, the lack of integration of competence at the macrosystem level. In addition to research on how discrimination affects outcomes of care, a major effort in the training of health care providers needs to occur in all areas. And, as this data highlights, for populations that are a ‘silent’ group which is being discriminated against by medical providers, poor and drug using women.

The data which has been reviewed in Chapter 2 along with the data from this study offer an explanation of what is associated with HIV risk behavior among women (while only one woman in this study reported HIV infection, the risk behavior among this sample remains high). Fundamental determinants of HIV risk among women are social inequalities including discrimination involving social class and race/ethnicity. These inequalities explain why the distribution of AIDS among women is predominantly poor women and African American women living in poverty. The continual work to understand biological mechanisms to reduce HIV susceptibility, to develop a vaccine and interventions to decrease HIV risk behavior must continue. However, research, which explicitly studies how social inequalities create risk of HIV, has only begun and needs to be expanded.

Outlining the first decade of public health efforts to understand and prevent the AIDS epidemic, Freudenberg (1995) concluded, "The future direction of this epidemic depends as much on what happens in the political arena as it does on new discoveries in the laboratories or on hospital wards....AIDS prevention effort has to be connected with a vision of a better world" (p. 70) . One area of research which would provide better descriptions of the women who get AIDS is to begin by linking HIV and AIDS surveillance data to existing databases which routinely document social economic, and political conditions at local, state, and federal levels (Zierler & Krieger, 1997).

Given the context of HIV and women, the social environment as a determinant of health provides a different perspective on the etiology of HIV infection. Utilizing this framework shifts the focus of nursing from the individual to the context, institutions, and societal structures in the environment where care is taking place. This is an important shift for nursing given the trend that HIV infection is decreasing in some groups while increasing in other groups. Nurses must look beyond the individual's environment and broaden their focus to include the social environment in order to determine why such differences exist between subpopulations of individuals infected with HIV.

Nurses in the community working from a theoretical conceptualization of the social environment that addresses many social injustices or issues, including racial/ethnic, class, and gender discrimination will provide more equitable care which will have more effect on the health status of their clients. The theoretical conceptualization also will serve as a foundation for guiding nursing interventions at the level of the societal structure or institution with the aim of change in the social environment that determines health. Reconceptualizing the environment in this way provides nurses with a framework from which to view the social, political and economic components that determine health.

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APPENDIX

Study Description: *Coping and Social Supports in Homeless Women* M.Chesney and J.P. Tulsky, Co-PI's

1. STUDY AIM/PURPOSE

The aim of the study is to collect quantitative information from homeless women in San Francisco about their experiences and attitudes toward healthcare, their health related behaviors and the link that this has to their health priorities.

2. BACKGROUND

Women are the fastest growing segment of the homeless population in the United States and they have enormous unaddressed health needs[1]. The UCSF population-based study of homeless adults[2] showed that a quarter of the women were infected with TB and about 4% were infected with HIV. High-risk behaviors were common. Nearly 30% currently used crack cocaine, 8% were current intravenous drug users, and 40% met screening criteria for alcoholism. They reported an average of 19 sexual partners in the past year. These women were also psychologically vulnerable. Almost 50% had received psychiatric care and over 30% had attempted suicide in their lifetime. The women had been homeless an average of six months, were young (mid-30's) and reasonably educated (70% graduated high school). Despite these disturbing facts, there are no controlled studies designed to evaluate the health status, attitudes, knowledge, and health behaviors of homeless women.

3. SIGNIFICANCE

Many previous studies have investigated the lives of homeless women in regards to their mental health and substance abuse history[3,4] but no study has attempted to also link women's attitudes and knowledge about healthcare to their health related behaviors. Women enrolled in this study will specifically be asked about their healthcare priorities and about the barriers to healthcare in their lives.

4. METHODS

a. General study design

This is a cross-sectional descriptive study using face-to-face anonymous, structured interviews. Extensive information will be collected from homeless women. (See Appendix A)

b. Methods of Data Analysis

Data will be analyzed using...Health priority scores will be calculated and compared. Life values will be ranked...

c. Subject Selection

1) Who and Why

The study will recruit 200 women from the city of San Francisco, ages 18 and older, who are currently homeless or unstably housed. This is a convenience sample of homeless women. The interviews are anonymous, as the study staff will not collect names. Two hundred of the women will complete the interviews. It will consist of a series of closed-ended questions. Homeless women will be approached at specific locations and asked if they would like to participate in a 45 minute face to face interview.

2) Total Number/Number per Group

This study plans to recruit and interview 200 women who are homeless or unstably housed.

3) Inclusion/Exclusion Criteria

<u>Inclusion criteria</u> for this study: English speaking and currently homeless or unstably housed women. Unstably housed means staying in a hotel, which is paid for, month-to-month.

<u>Exclusion criteria</u> for this study: none

d. Subject Recruitment

1) Subjects in this project will be approached at homeless shelters in San Francisco. Trained staff research assistants at the Hamilton Family Center, St. Anthony's Womens Shelter, and a Woman's Place will approach possible participants. If possible participants are interested in hearing about the project, the study staff and the potential subject will move to a private area of the shelter. Data collection times will be coordinated with the shelter staff.

e. Consent Process and Documentation

Women staying at designated shelters who are interested in participating in the study will review the consent form with the study staff. At this time questions about the project can be answered. As names will not be collected, women will be told that they can sign initials.

f. Procedures

1) Study Procedures

Two staff research assistants will work at a given site at a time. With the support of the shelter staff, the homeless women will be approached and asked if they would be interested in participating by completing the study interview. If a person is willing to consider participating in this study, a staff research assistant will review the consent form (See Appendix B). To understand the attitudes and behaviors of homeless women toward health, mental health and substance use issues, the proposed research will collect quantitative data. Women staying at designated homeless shelters will be asked to participate in the study by completing a face-to-face interview. The interview will be administered by a trained staff research assistant. No identifier will be used that will link the women to her response. The interview lasts about 45 minutes and concentrates on questions about subjects' history of homelessness, perceived health status, health attitudes, knowledge and behaviors, substance use, depression, and anxiety. Subjects will be interviewed at the homeless shelter that they are staying at, so no travel time will be necessary. Effort will be made to do the interview in a private spot to insure confidentiality. They will be paid $5.00 cash at the end of the interview.

2) Time

Subjects are asked to complete a face-to-face structured interview that lasts 45 minutes. Interviews will take place at homeless shelters where subjects are staying, so no travel time will be necessary.

3) Study Sites

Subjects (women) who are staying at designated homeless shelters in the city of San Francisco. Subjects will be asked to participate by completing a study interview at A Woman's Place, St. Anthony's and The Hamilton Family Center. To understand the attitudes and behaviors of homeless women toward health, mental health and substance use issues, the proposed research will collect quantitative data. Women staying at these homeless shelters will be asked to participate in the study by completing a face-to-face interview.

g. Risks/Discomforts

There is a risk of psychological discomfort due to the delicate subject matter of the study. Questions that are sensitive will be placed later in the survey that will allow the interviewers to develop rapport with the women prior to asking the questions. Also, the women will be told that there are no "right or wrong" answers. Finally, the interviewers will assure the women that the information will remain anonymous and that their names are not recorded and will not appear on the surveys. In addition, staff interviewers are trained to communicate verbally and non-verbally in a non-judgmental way when recruiting and interviewing homeless and unstably housed women. If a subject is visibly distressed at the end of the interview, she will be given referral to health/mental health agencies where she can be seen at no charge.

There is a small risk of loss of confidentiality. To protect confidentiality all data will be identified and analyzed with only a code number and no individual identities will be used in publications resulting form this study. Participant's names are not collected. An ID code is assigned simply to record the number of participants enrolled. All data will be stored in a locked file cabinet in the offices of the Co-Investigator, Dr. Jacqueline Peterson Tulsky at the Center for Aids Prevention Studies, 74 New Montgomery, San Francisco CA.

h. Treatment and Compensation for Injury

If at the end of the interview, subjects are visibly distressed, the interviewer will make referrals to agencies.

i. Alternatives

none

j. Costs to the Subject

There is no cost to the subject to participate in this study.

k. Reimbursements of Subjects

All study subjects will receive $5 in cash for completing a face-to-face interview with a staff research assistant.

l. Confidentiality of Records

The study interview is anonymous, as study participants will not be asked to give their names. All participants will be given an ID code, simply to record the number of subjects interviewed. In addition, all interviews will be kept in locked files at the Center for Aids Prevention Studies, at 74 New Montgomery.

5. QUALIFICATIONS OF INVESTIGATORS

Dr. Margaret Chesney, Principal Investigator - Dr. Chesney is an Adjunct Professor in the School of Medicine at UCSF. She is the Co-Director of the Center for AIDS Prevention Studies at UCSF.

Dr. Jacqueline Peterson Tulsky , Co-Investigator - Dr. Peterson Tulsky is an Assistant Clinical Professor of Medicine at UCSF/SFGH.

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