

# Correlates of Perceived Health in Women Diagnosed with HIV Disease

K Kirksey, M Hamilton, M Holt-Ashley

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## Abstract

The purpose of this descriptive study was to examine the relationships among self-efficacy, social support, quality of life, and overall health perception in a sample of 61 women with a mean age of 40 years living with HIV disease. Data collection occurred in a university-based AIDS clinic in a large metropolitan city in the southern United States. Each participant completed a sociodemographic questionnaire, the Sickness Impact Profile, the Norbeck Social Support Questionnaire, and the Strategies Used by Patients to Promote Health Questionnaire. The findings suggest that social support and quality of life were significantly related to overall perception of health. Self-efficacy had an indirect impact on overall perception of health via social support. These findings support the need for nurses to continue exploring ways to integrate social support within the domains of clinical practice of persons with HIV disease.

## BACKGROUND

The sociodemographic characteristics of individuals with acquired immunodeficiency syndrome (AIDS) have rapidly shifted during the past decade, as women now comprise the fastest growing segment of this population. In June 1999, females accounted for 32% of all adult cases of Human Immunodeficiency Virus (HIV) infection (CDC, 1999). In addition, the pandemic continues to disproportionately affect ethnic minorities. Seventy-seven percent of HIV cases are among African-American and Hispanic women. Persons aged 13-24 years account for 15% of reported HIV cases, and women account for 49% of cases in this age group (CDC, 1999).

The two primary modes of transmission among women with AIDS are injecting drug use (43%) and heterosexual contact (37%) (CDC, 1999).

Research studies have documented different psychological and sociodemographic characteristics among women and men with AIDS. Males are reported as being primarily gay, white and college educated (Kaplan, Marks & Mertens, 1997) and females are primarily poor, racial minorities, and less educated (Regan-Kubinski & Sharts-Hopko, 1995). In addition, many of the women are single mothers who head households with young children. It has also been suggested that because males are members of the gay community they have access to more social support than females (Regan-

Kubinski & Sharts-Hopko, 1995). Although the number of studies in women with AIDS is increasing, research has focused primarily on prevalence and prevention in white gay males. Women remain understudied, underreported, and underdiagnosed. There are insufficient resources and services targeting the primary prevention needs of women (Stevens, 1995).

## REVIEW OF THE LITERATURE

As the number of women with HIV disease increases, and with no cure in immediate sight, understanding how HIV positive women adapt psychologically and socially has acquired a new importance (Nannis, Patterson, & Semple, 1997). The psychosocial response of women to HIV infection may have implications for disease progression and quality of life. As AIDS treatments become more effective, concerns about quality of life increase. There is still too little information about quality of life among women with HIV disease.

## SOCIAL SUPPORT

Semple et al. (1996) examined social and psychological characteristics of 60 HIV –positive women and gay men, matched on age and stage of HIV infection. A discriminant function analysis was performed using measures of life adversity, psychological distress, and psychosocial resources. The best combination of predictors for distinguishing between HIV-positive women and gay men

was comprised of satisfaction with emotional support, network size, use of avoidant coping, depression, and loneliness scores [ $\chi^2(7) = 14.8, p < 0.05$ ]. Women reported more satisfaction with emotional support, although gay men had larger social networks. Gay men used more avoidant coping and had higher loneliness scores as compared to women, although women reported more depressive symptoms.

Nannis, Patterson, & Semple (1997) assessed the psychosocial correlates of 58 HIV-infected women. These women were generally well educated, employed and therefore did not suffer from socioeconomic factors associated with inner city living and drug use. The researcher performed a discriminant function analysis to determine which of five psychosocial variables could discriminate between those who strongly self-identified with each of three coping styles from those with low self-identification. For problem solving style, the best combination of predictors (loadings  $> 0.25$ ) was: strong social support, lower loneliness, depression, and anger, and a belief in a chance locus of control. The best combination of predictors for identification with a hopeless coping style was: loneliness, depression, anger, lower social support and less belief in a chance locus of control. Strong identification with a stoic coping style included belief in a chance locus of control and lower social support, loneliness, and anger. Results of the study point to areas of psychosocial functioning which need to be strengthened or diminished in order to maintain effective coping for HIV-infected women and enhance their quality of life (Nannis, Patterson, & Semple (1997).

### **QUALITY OF LIFE**

In a descriptive study ( $n = 52$ ), Rose & Clark-Alexander (1996) explored quality of life and coping methods of HIV positive women with children. The sample answered an adapted Padilla Quality of Life Index and the Jalowiec Coping Scale. Among the psychological, physical, and social quality of life subscales, social quality of life was rated highest and the psychological scale rated the lowest. Significant relationships between coping and quality of life were examined.

The authors concluded that it is essential for nurses working with HIV-infected women to be aware of their common concerns and provide effective strategies to improve quality of life such as enhancing decision making and coping skills within the context of the family unit.

Sarna et al. (1999) described quality of life in a convenience sample of 44 women with symptomatic HIV disease. Changes in physical, psychological, social, sexual dimensions, and overall quality of life were evaluated. The mean scores of the global quality of life, physical and psychosocial summary scales were significantly different over a four-month period as quality of life improved. The most prevalent disruptions were in the psychosocial domain, including financial problems, worry about family, distress about losing others from HIV, and worry about disease progression. The most prevalent physical disruptions included reduced energy, difficulties with daily activities and frequent pain. Married women were more vulnerable to changes in quality of life over time.

In a similar study, Moneyham et al. (1998) examined the effectiveness of active and passive coping styles in a sample of 264 women with HIV disease. Active coping strategies that were examined included social support, managing the illness, and spiritual activities. Avoidance was used as an indicator of passive coping. In both models, physical symptoms and emotional distress were positively and significantly related. The findings indicated that, whereas current avoidance coping was not related to emotional distress, current active coping was positively related to physical symptoms and negatively related to emotional distress. The findings suggest that interventions that support attempts to use active coping strategies as physical symptoms increase may be effective in promoting positive adaptation to HIV disease.

### **SELF-EFFICACY**

Self-efficacy has been shown to impact health practices as well as adaptation to illness and treatment (Bandura, 1986). Bandura (1986) defined self-efficacy expectations as a person's convictions that he or she can execute the behavior required to produce a desired outcome. Increased self-efficacy has been associated with increased adherence to treatment, increased self-care behaviors, and decreased physical and psychological symptoms. Converging findings from several areas of research show that the effects of therapeutic interventions on health behavior are partly mediated by changes in perceived self-efficacy (Utz, Shuster, Merwin & Williams, 1994).

### **SOCIAL SUPPORT AND QUALITY OF LIFE**

Sowell et al. (1997) evaluated the relationships between social (family functioning, disclosure, material resources, and social support) and psychological factors (stigma,

fatalism, avoidance, intrusion, and emotional distress) as predictors of quality of life in HIV-infected women. The cross-sectional data were tabulated from interviews of 264 women. There was a wide range of scores in the sample among quality of life, general anxiety, limited daily functioning, and HIV symptoms. The data were analyzed using ANOVA, correlations and hierarchical multiple regression analysis. Limited daily functioning was predicted by stigma, fatalism, employment status, and stage of disease ( $R^2 = 0.179$ ). General anxiety was predicted by emotional distress, marital status, and intrusion ( $R^2 = 0.503$ ). Reported HIV symptoms were predicted by race, age, employment status, intrusion, disclosure, and material resources ( $R^2 = 0.294$ ). The authors concluded that social and psychological factors are important in quality of life of HIV-infected women.

In a similar study, Swindells et al. (1999) designed a multi-center, longitudinal project with a sample of 138 HIV-infected patients. The study aim was to determine whether the quality of life of HIV-infected patients was influenced by satisfaction with social support, coping style, and hopelessness. Quality of life did not correlate with age, gender, race, HIV risk factor, education or marital status. Employment ( $p = 0.0001$ ), higher income ( $p = 0.03$ ), satisfaction with social support ( $p = 0.04$ ), and problem-focused coping ( $p = 0.03$ ) were associated with a significantly better quality of life. Emotion-focused coping ( $r = -0.19$ ,  $p = 0.04$ ), avoidant coping ( $r = 0.40$ ,  $p = 0.0001$ ), hopelessness ( $r = -0.64$ ,  $p = 0.0001$ ) and AIDS ( $p = 0.09$ ) were predictors of poorer quality of life. The authors concluded that interventions aimed at alleviating hopelessness, maladaptive coping, and enhancement of satisfaction with social support may improve overall quality of life in HIV-infected patients.

Quality of life, social support and self-efficacy are omnibus concepts. The literature cited in MEDLINE/HealthSTAR database from 1995-2000 is expansive. Because of the extensiveness of the published literature, this paper only presented select articles that addressed the predictor variables as correlates of perceived health status.

### **PURPOSE**

The purpose of this study was to describe the relationships of self-efficacy, social support, quality of life, and perception of overall health in women with HIV disease. Health care professionals are challenged to devise interventions based on psychosocial responses that are culturally appropriate,

sensitive to needs, and gender specific.

### **METHODS**

A descriptive survey design was used to examine and quantify the relationships of self-efficacy, social support, sickness-related dysfunction and perception of overall health in women with HIV disease. Data collection occurred at an outpatient facility in Houston, Texas. The clinic treats approximately 5200 clients diagnosed with HIV or an AIDS-defining illness. Approximately 44% are African-American and 15% are Latina. Forty percent of the population is female.

A convenience sample ( $n = 61$ ) of HIV-infected women who met the inclusion criteria were recruited to participate. Inclusion criteria were (1) at least 18 years of age, (2) ability to understand English, (3) no severe visual impairment, and (4) absence of stupor, unconscious or confused state.

### **PROCEDURES**

Persons who met the inclusion criteria were approached either by the principal investigator, co-principal investigator, or clinical site coordinator and asked to participate in the study. The participants were offered \$10 gift certificates to a local grocery store as compensation for their time.

Protection of human subjects was guaranteed by adhering to the requirements of the Human Subjects Review Committees of Texas A&M University-Corpus Christi and the clinical facility. The study was described to potential participants, they were asked to participate, and, if they agreed, were read the consent form and given the opportunity to ask questions. They were assured that failure to participate in the study would not affect their health care or status at the facility. After informed consent was obtained, the questionnaires were administered to the participants. The instrument packet required approximately 45 minutes to complete. Most questionnaires were self-administered, but a few participants required the questionnaires to be read.

### **RESEARCH INSTRUMENTS**

The survey questionnaire was composed of four instruments, which were completed by each participant. Predictor variables in the sample were assessed by the sociodemographic questionnaire. Self-efficacy was measured by The Strategies Used by Patients to Promote Health (Lev & Owen, 1996). Social support was measured by the Norbeck Social Support Questionnaire (Norbeck, Lindsey & Carrieri, 1983), and sickness-related dysfunction was measured by the Sickness Impact Profile (Bergner et al.,

1976). The outcome variable, overall health perception, was represented by one item on the sociodemographic questionnaire.

### **SOCIODEMOGRAPHIC QUESTIONNAIRE.**

The sociodemographic questionnaire was developed by the authors and pilot tested with the other study instruments on a sample of similar participants. It assessed age, ethnic group, personal income, employment, educational level, marital status and sexual orientation. It also asked participants how healthy they thought they were. The subjects were also asked when they were first told that they had HIV disease and about risk categories.

### **STRATEGIES USED BY PATIENTS TO PROMOTE HEALTH (SUPPH).**

The SUPPH is a 29-item self-report instrument used to measure self-care/self-efficacy. It was previously used to measure this variable in both patients with cancer and patients receiving hemodialysis for end-stage renal disease (ESRD). Self-care/self-efficacy is defined as a person's confidence to perform strategies believed to promote health. Exploratory factor analysis was investigated using 161 subjects; of these, 97 subjects received hemodialysis for ESRD and 64 subjects received chemotherapy for cancer. Participants were asked to rate the degree of confidence in carrying out specific self-care behaviors. Each item was rated on a five-point scale of confidence from 1 (very little) to 5 (quite a lot). The instrument was scored by calculating mean responses across all items for each subscore. Estimates of internal consistency reliability (Cronbach's  $\alpha$ ) were estimated at  $r = 0.94$  to  $0.96$  and validity evidence was reported (Lev & Owen, 1996).

### **NORBECK SOCIAL SUPPORT QUESTIONNAIRE (NSSQ).**

The NSSQ consists of nine questions and measures functional support; size, stability, and availability of social support; and the total number of lost relationships over the past year. Subjects evaluate social support using a five-point Likert-type scale, with responses ranging from "not at all" to "a great deal."

The NSSQ measures the variables of total functional, total network, and total loss. For the first eight questions, the participant is asked to rate each support person on a five-point scale. Question 9 is answered with yes or no. These questions indicate the numbers and quality of losses of social support (Norbeck, Lindsey & Carrieri, 1981).

Validity and reliability were established at the time of scale development (Norbeck, Lindsey & Carrieri, 1981) and through subsequent testing (Norbeck, Lindsey & Carrieri, 1983; Norbeck & Anderson, 1989). Reliability of the instrument was established by internal consistency and test-retest. Internal consistency on three subscale tests was demonstrated to be  $r = 0.89$ ,  $r = 0.96$  and  $r = 0.97$ .

### **SICKNESS IMPACT PROFILE (SIP).**

The SIP is a 136-item questionnaire that measures sickness-related dysfunction according to twelve areas of activity. The areas include: communication; social interaction; alertness behavior; emotional behavior; mobility; recreation and pastimes; work; home management; eating; ambulation; body care and movement; and sleep and rest. The SIP was tested for reliability in terms of internal consistency and reproducibility on 278 randomly selected subjects from rehabilitation and audiology/speech pathology units in a large, general hospital. Internal consistency was  $r = 0.90$  and 24-hour test-retest reliability was determined to be  $r = 0.80$  for the entire instrument (Bergner et al., 1976). The SIP was also used in a prospective study of adjustment to hemodialysis to measure health status (Lev & Owen, 1998). Internal consistency was reported as  $r = 0.75$  to  $0.92$ . Evidence of clinical validity has been reported in several study reports (Bergner et al., 1981; Bergner, Hudson, Conrad, et al., 1988; Patrick & Deyo, 1989).

### **SOCIODEMOGRAPHIC QUESTIONNAIRE.**

Overall health perception was measured using a single item on the Sociodemographic Questionnaire. The item asked participants the following question: "How healthy do you think you are?" Possible responses included: 1) "Very healthy;" 2) "Better than most people;" 3) "About average;" 4) "Not too healthy;" and 5) "Very sick."

### **DATA ANALYSIS**

After data cleaning, frequency distributions, descriptive statistics and correlational analyses were computed for all variables. Data were analyzed using SPSS Statistical

Package version 9.0 (SPSS Inc., Chicago, IL).

Sociodemographic data for study participants are presented in Table 1. A selected set of variables explored the contribution of the predictors to overall health perception. Then, a multiple regression analysis was done on the outcome variable, overall health perception, represented by social support, illness-related dysfunction, and self-efficacy. Means, standard deviations and ranges for descriptive data

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for predictor and outcome variables used for multiple regression analyses are presented in Table 2. Table 3 presents multiple regression among the variables; ethnicity, social support, self-efficacy, and illness-related dysfunction as predictors of perceived health status.

**FINDINGS**

A total of 61 women with HIV Disease participated in this study. Of these, 77.0% were African-American, 9.8% were Latina, 9.8% were white, not Hispanic, 1.6% were American Indian/Alaska Native, and 1.6% classified themselves as other (see Table 1). In addition, a majority (98.4%) had incomes of less than \$15,000 annually and were unemployed (88.5%). Almost half (47.5%) had completed some high school or college, and the majority (83.6%) had never been married or were currently separated or divorced. Participants ranged in age from 22 to 71 years, with a mean of 40.48 and standard deviation of 11.40. An overwhelming majority (90.2%) self-identified as heterosexual. The mean time in months since they were first informed of their HIV diagnosis was 51.82 with a standard deviation of 41.25 and range of 1 – 180 months. Thirteen (21.3) had injected intravenous drugs and 23 (37.7%) reported having unprotected sexual intercourse with a heterosexual male.

**Figure 1**

TABLE 1. Sociodemographic Data for Female Participants (n = 61)

<u>Demographics</u>	<u>Frequency</u>	<u>Percentage</u>
<b>Ethnic Group</b>		
African-American	47	77.0
Not African-American	14	23.0
<b>Personal income/year</b>		
Less than \$15,000	60	98.4
Not reported	1	1.6
<b>Work Status</b>		
Currently employed	7	11.5
Not currently employed	54	88.5
<b>Highest Educational Level</b>		
Grades 1-8	13	21.3
Some High School	19	31.1
Graduated High School	21	34.4
College	8	13.1
<b>Marital Status</b>		
Single, never married	34	55.7
Married	10	16.4
Separated	7	11.5
Divorced	10	16.4
<b>Demographics</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Sexual Orientation</b>		
Heterosexual	55	90.2
Homosexual	2	3.2
Not reported	4	6.6

The majority of the participants (88.6%) perceived their health status as “about average” or better. Responses to the

question “How healthy do you think you are?” were “very healthy” (n = 12, 19.7%), “better than most people” (n = 20, 32.8%), “about average” (n = 22, 36.1%), and “not too healthy” (n = 7, 11.5%). None of the subjects rated themselves as “very sick.” African-Americans perceived themselves as being more healthy than other ethnic groups. Following dummy coding (African-Americans = 1, other races = 0), the African-American women had a mean score of 2.19 with a standard deviation of .85 compared to the women of other ethnic groups who had a mean score of 3.07 with a standard deviation of .92. Higher scores on this question indicated self-perception of poorer health status.

Means, standard deviations, and ranges were calculated for the predictor variables (see Table 2). A multiple regression was calculated on the components (self-efficacy, quality of life, and social support) predicting overall health status (see Table 3). Overall, the combination of predictors explained 25.5% of the variance in the outcome variable, perceived health status. Ethnicity (i.e., African-American women) accounted for 11.4% of this explained variance. Figure 1 presents a model depicting the relationships among the predictor and outcome variables. In the analysis, social support and quality of life (psychosocial dimension on the Sickness Impact Profile) had a direct effect on overall health perception. Self-efficacy had an indirect impact on overall health perception via social support.

**Figure 2**

TABLE 2. Descriptive data for variables used in Multiple Regression Analyses (n = 61)

<u>Outcome Variable</u>	<u>Mean</u>	<u>SD</u>	<u>Range</u>
Single variable on Sociodemographic Questionnaire Health Status	2.43	0.92	1 – 4
<b>Predictor Variables</b>			
Sickness Impact Profile			
Psychosocial	99.45	87.89	0 – 325.48
Physical	52.83	56.63	0 – 273.26
Norbeck Social Support Scale			
Emotional Support	102.51	63.45	14 – 279
AID	50.00	30.15	8 – 126
Total Function	151.08	90.82	
SUPPH			
Self-Efficacy	91.07	25.13	30 – 140

**Figure 3**

TABLE 3. Multiple Regression Predicting Perceived Health Status (n = 61)

	R <sup>2</sup>	R <sup>2</sup> ?	Sr <sup>2</sup>	p?
Block	0.255	0.255		0.002
Ethnicity			0.1136	0.005
Self-efficacy			0.0123	0.342
Psychosocial (Quality of Life)			0.0778	0.019
Social Support			0.0650	0.031

**DISCUSSION**

These findings support other studies that have documented a positive relationship between social support and quality of life (overall health perception) (Nannis, Patterson, & Semple, 1997; Swindells et al., 1999; Sowell et al., 1997). Social support and the psychosocial dimension of sickness-related dysfunction were significant predictors of overall health perception. Because social support plays such a significant role in one's progress through a life-threatening illness (Moser, 1994; White & Frasure-Smith, 1995), strategies should be explored that might enhance women's perception of having that support.

Ethnicity was identified as an exogenous variable in this study. This is in contrast to findings by Swindells et al (1999) that quality of life did not correlate with race. However, Davidson et al. (1998) found similar characteristics in their sample to those in this study. The participants in both studies were primarily women of color who generally had little formal schooling.

Due to the study's design, causal relationships cannot be inferred among social support, self-efficacy, quality of life and overall health perception. In addition, generalizability is limited given the sample size of 61 women with HIV infection.

In addition to contributing to the field of nursing knowledge regarding the relationship between social support and quality of life (health perception), this study on social support, self-efficacy, and quality of life as multiple implications for nursing care and the delivery of care. This research demonstrated that social support and quality of life correlated significantly with overall health perception. The implications for nursing practice are to identify and implement innovative means of fostering support in this population.

Future research efforts might replicate the study with a heterogeneous sample of men and women. The relationships between social support and quality of life, and overall health perception could be examined in various populations. Other social support instruments might be used to determine if different conceptualizations of social support are better predictors of the expected positive relationships. A grounded theory methodology could be used to obtain data about social support and overall health perception from the perspective of persons living with HIV disease.

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**CORRESPONDENCE TO**

Kenn M. Kirksey, PhD, APRN, BC Associate Professor of Nursing California State University, Fresno Department of Nursing Fresno, CA 93740-8031 Email: [kkirksey@csufresno.edu](mailto:kkirksey@csufresno.edu)

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**Author Information**

**Kenn M. Kirksey, PhD, APRN, BC**

Associate Professor of Nursing, Department of Nursing, California State University

**Mary Jane Hamilton, PhD, RNC**

Professor of Nursing, School of Nursing & Health Sciences, Texas A&M University

**Mary Holt-Ashley, PhD, RN, CNAA**

Vice-President, Nursing Services, Ben Taub General Hospital, Adjunct Professor, Prairie View A&M University, and University of Texas-Houston, Schools of Nursing