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# Using Peplau's Theory to Examine the Psychosocial Factors Associated with HIV-infected Women's Difficulty in Taking Their Medications

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**Abstract:** *Although combination therapies slow progression of HIV disease, HIV-infected women face new challenges that must be overcome to increase their life expectancy. One challenge is adherence to strict, and often unpleasant, drug regimens. Peplau's Theory of Interpersonal Relationships provides a framework for identifying and examining factors that influence medication adherence, in particular difficulties in taking medication. A descriptive, correlational design was used to test associations between difficulty taking HIV medications and a woman's relationship with her primary healthcare provider (PHCP), depression, HIV-specific emotional and tangible support, present life satisfaction, family functioning, HIV-related symptoms, AIDS beliefs and perceptions, medication side-effects, and hope. Relationship with PHCP ( $F = 5.30, p = .0235$ ) and present life satisfaction ( $F = 11.32, p = .0011$ ) explained 22% of the variance in HIV-infected women's difficulty in taking medications. This study supports the importance of a therapeutic relationship between PHCPs and patients in overcoming difficulties associated with taking HIV medications.*

**Key Words:** *Life satisfaction, medication adherence, therapeutic relationship*

## Using Peplau's Theory to Examine the Psychosocial Factors Associated with HIV-infected Women's Difficulty in Taking Their Medications

Women represent one of the fastest growing demographic groups being diagnosed with human immunodeficiency virus (HIV) infection. Since the beginning of the epidemic, approximately 9 million women worldwide have died from complications of AIDS, and an estimated 16.4 million are infected with HIV (Centers for Disease Control, 2000). Although morbidity and mortality remain high in HIV infection, treatment advances using multiple drug therapy have made HIV disease a more chronic illness (Esch & Frank, 2001). Multiple drug therapy, however, requires sustained adherence to complex treatment protocols that often include taking a large number of pills and attention to dietary restrictions (Paterson et al., 2000). Many HIV-infected individuals have equated the activities associated with adhering to these complex regimes with having a "full-time" job (Sowell, Phillips, & Grier, 1998).

A growing body of research documents the difficulty of long-term adherence to multiple drug therapy and the barriers that influence individuals' ability to adhere complicated regimes (Catz et al., 2000a; Catz et al., 2000b; Proctor, Tesfa, & Tompkins, 1999; Roberts & Mann, 2000). Previous research suggests that lifestyle characteristics, social support networks, trust in the health care provider, and complexity of treatment protocols are important factors in adherence (Catz et al., 2000a; Catz et al., 2000b; Proctor et al., 1999; Roberts & Mann, 2000). One of the most significant factors identified in decreasing the likelihood of adherence is difficulty in taking medications (Proctor et al., 1999). Although difficulty in taking medications is recognized as an important aspect of adherence, there has been limited research to examine specific factors associated with the ability to take HIV medications. Factors that affect women's ability to take HIV medications may be different than those previously identified in groups of males (Burke & Dunbar-Jacobs, 1995). The purpose of this study was to determine psychosocial factors that are related to

overcoming difficulty in taking medications in a cohort of HIV-infected women. Greater understanding of psychosocial factors that lead to increased difficulty in taking medications is an essential step in providing HIV-infected individuals with the highest level of care. Peplau's (1952) Theory of Interpersonal Relationships provides an appropriate theoretical basis for the study of psychosocial factors that affect the difficulty that HIV-infected women experience in taking medications. Peplau's theory focuses on communication and underscores the importance of establishing a therapeutic relationship in responding to healthcare problems.

### THEORETICAL FRAMEWORK AND RATIONALE

Peplau's theory implies the health care provider's importance in the patient's social network. Peplau proposes that the relationship between the patient and the primary healthcare-provider (PCHP) is the basis of therapeutic practice and that every aspect of a patient's care centers around that relationship (Howk et al., 1998). See Figure 1. A positive relationship between the patient and the PCHP is vital to achieving a positive outcome. This study conceptualizes the influence of the relationship between an HIV-infected woman and her PCHP as one of the most important factors in determining perceived difficulty in taking medications. See Figure 2. In a therapeutic relationship, the PCHP and an HIV-infected individual come together, identify a problem (difficulty), and develop a strategy to overcome that problem (Peplau 1952, 1988). See Figure 3.

The development of a therapeutic relationship occurs in four separate, but overlapping phases (Peplau, 1997). Peplau posits that changes in the relationship between a patient and a PCHP occur over time and that patients and health-care providers begin their relationship as strangers. Peplau identifies this initial phase of the relationship as orientation. In the orientation phase, the

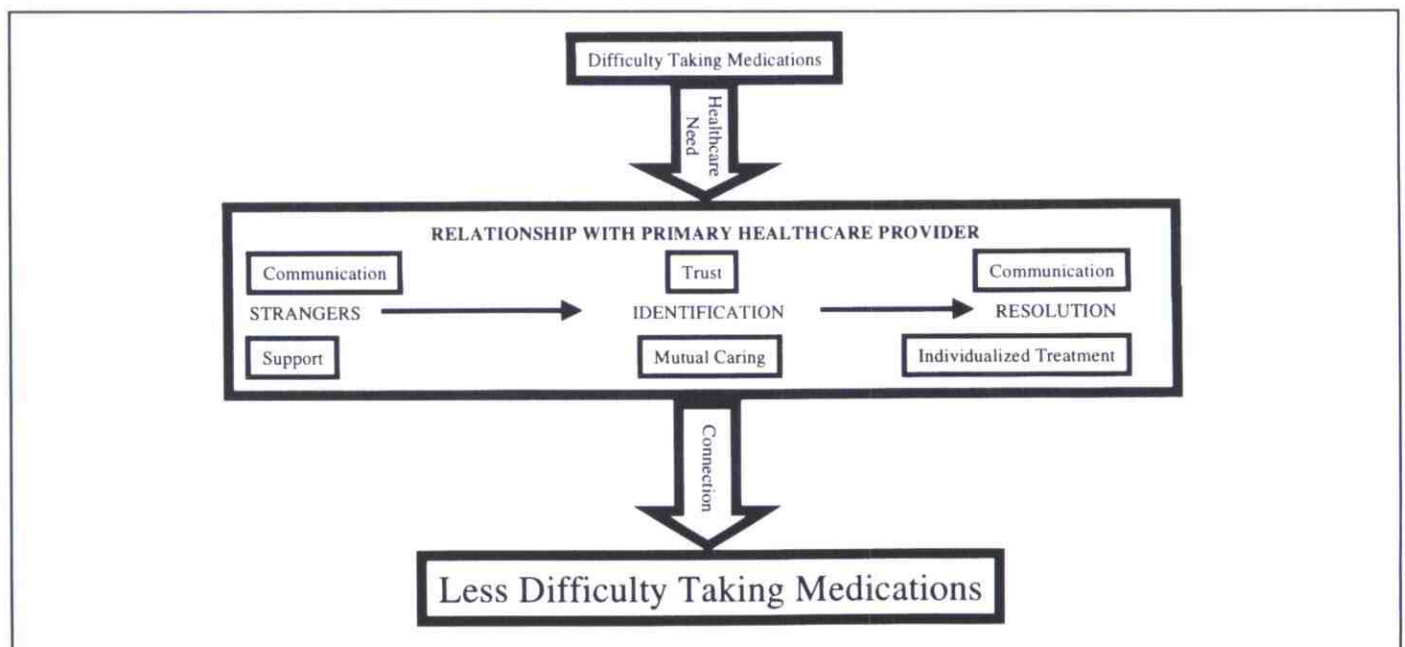
Figure 1. Derivation of a Situation-specific Theory from Peplau's Theory of Interpersonal Relationships

Concept	Definitions from Peplau's Midrange Theory	Situation-specific Theory Definition
Relationship	"The nurse-patient relationship is a particular kind of interaction. It is not a parent-child relationship. It is not a social relationship of friend-to-friend. It is not a clerk-to-customer relationship. Nor, is it a master-to-servant relationship. Rather, the nurse is a professional, which means a person having a definable expertise. That expert knowledge pertains to the nature of phenomena within the purview of nursing and to the reliable interventions which have been research-tested and therefore have predictable, known outcomes" (Peplau, 1992, p. 14).	The relationship between an HIV+ woman and her primary healthcare provider
Barriers	"problems that interfere with constructive living" (Peplau, 1992, p. 15).	Factors that contribute to the difficulty that an HIV-infected woman experiences in taking medication as prescribed.
Resolution	Resolution of the problem with mutual understanding through collaborative efforts of the patient and the nurse	Taking medication as prescribed with less difficulty

Figure 2. Development of a Midrange Theory from Peplau's Theory of Interpersonal Relationships

Philosophical Assumptions	<ol style="list-style-type: none"> <li>1. The relationship between a patient and a PCHP is significant and makes a difference in patient outcomes.</li> <li>2. A positive relationship allows the patient and the PCHP to explore difficulties with taking medications and to find solutions to help overcome those difficulties.</li> </ol>
Propositions	<ol style="list-style-type: none"> <li>1. A relationship exists between the quality of the patient-PCHP relationship and the degree of difficulty that an HIV-infected woman experiences in taking her medications.</li> <li>2. In a more positive relationship, an HIV-infected woman experiences less difficulty with taking medications.</li> </ol>

Figure 3. Proposed Theory of Patient-Primary Healthcare Provider Relationship and Difficulty Taking Medications





patient and the PCHP hold preconceived ideas about each other, and they have separate goals and interests. As the relationship evolves to the second phase, which is the identification phase, the patient starts to identify the PHCP as someone who may be able to offer help. As the therapeutic relationship strengthens, the identification phase gives rise to the exploitation phase in which the patient derives full benefit from what is offered in the relationship. The exploitation phase is the one in which new goals are established. Mutual understanding of the problem then moves the relationship to the phase of resolution, where there is a collaborative effort toward problem solving. In the resolution phase, old goals are put aside, new goals are adopted, and the patient becomes independent once again. Resolution is achieved when, through a collaborative effort with the PHCP, an HIV-infected woman finds ways to take medications with less difficulty (Peplau, 1952).

During all phases of the therapeutic relationship, communication is essential. Communication requires honesty and self-scrutiny on the part of the PHCP and the patient. During interactions with the patient, PCHPs must diligently analyze their own behavior and assess what their behavior is communicating to the patient. PHCPs need to understand that their own behavior can facilitate or deter positive health behaviors by the patient. In caring for HIV-infected women, provider-patient relationships that allow the PHCP to understand the woman's life situation and identify barriers to taking medications are essential in developing strategies that support medication adherence. Understanding the meaning of a patient's experience from the patient's perspective may allow the PCHP to identify barriers to taking antiretroviral medications and establish mutual goals that help the patient develop strategies to overcome barriers. In this study, lack of HIV-specific emotional support, lack of HIV-specific tangible support, decreased life satisfaction, poorer family functioning, more HIV-related symptoms, a less positive attitude about being able to manage HIV disease, greater problems with side-effects of medication, and lower levels of hope were conceptualized as barriers.

## LITERATURE REVIEW

A review of the literature reveals a number of research studies examining patient barriers and non-adherence to medications, interactions between healthcare providers and HIV-infected patients, and HIV patient's non-adherence to medication regimens. Nonetheless, few published studies have specifically examined the influence of the relationship between the patient and the PHCP on willingness and/or ability to take medications in HIV-infected women.

### Relationships

Relationships and the resultant support can be important in all aspects of treatment, especially in adherence to antiretroviral medication regimens (Altice, Mostashari, & Friedland, 2001). Research has shown that patient-PHCP relationships that are built on caring, trust, and communication result in a connection between the patient and the PHCP, leading to better clinical outcomes (Altice et al., 2001; Sherman, 2000). The concepts of caring, trust, communication, and connection appear repeatedly in the health care literature as necessary characteristics of therapeutic relationships between PHCPs and their patients (Mostashari, Riley, Selwyn, & Altice, 1998; Sherman, 2000; Stone et al., 1998).

In a descriptive study, Sherman (2000) examined the development of the relationship between healthcare providers and their HIV-infected patients. Sherman found that patients valued what they described as special relationships with their health care providers; these special relationships involved a special chemistry or a blending of personalities. This study supports Peplau's (1992) assertion that wisdom, skill, and compassion are vital components of patient-PHCP relationships. The emotional and spiritual

growth that occurs both with the patient and PHCP in such a special relationship can become a powerful healing tool. Where such a relationship does not exist, the patient-PHCP relationship can serve as a barrier to care (Leenerts, 1998).

Preston, Forti, Kassab, and Koch (2000) investigated the individual and social determinants of rural nurses' willingness to care for AIDS patients. These researchers found that positive attitudes about AIDS expressed by healthcare providers lead to more positive relationships and better care for the patients. Individual determinants of healthcare provider attitude were feelings of competency and safety while providing care to HIV-infected patients. These findings support that healthcare providers' attitudes can affect the care HIV-infected persons receive. Conversely, Sowell and colleagues (1999), in a study of the relationship between an HIV-infected woman and her PHCP, found that the woman's perception of the healthcare provider's attitude was a significant influence on the woman's beliefs and intent to take antiretroviral medications. These findings underscore the importance of communication between women and PHCPs in HIV-infected women's decisions to accept and take HIV medications.

### Barriers

Patients' beliefs, attitudes, and psychosocial health have an influence on medication adherence. It is essential that HIV-infected women be encouraged to tell their PHCPs about their individual difficulties in taking medications. Ineffective communication influences patient behaviors and decision-making (Ungvarski, 1997). The inability of a healthcare provider to communicate effectively may result in difficulties for the patient. Open communication not only strengthens the patient-PHCP relationship, but it may enlighten the provider about behavioral patterns and choices of the patient, empowering the provider to assist and motivate women to take prescribed medications. In a study of women with HIV infection, Sowell and colleagues (1996) identified seven barriers women reported that prevented them from receiving appropriate healthcare services. Those barriers were a) providers' lack of knowledge, b) fear of receiving negative treatment, c) provider insensitivity, d) lack of education, e) lack of confidentiality, f) lack of honesty, and g) blaming the victim. These findings underscore the need for a trusting patient-PHCP relationship that includes positive communication, culturally sensitive education, and autonomy in order for HIV-infected women to achieve optimum healthcare outcomes. Since autonomy is an important aspect of any patient's care, the PHCP should allow the patient to participate in and share feelings about the prescribed plan of care (Anastasio, 1995).

An explanatory model of health promotion and quality of life for patients with chronic conditions (Stuifbergen, Seraphine, & Roberts, 2000) proposes that one must understand the experience of the individual in order to decrease barriers to health promoting behaviors. This model's emphasis on communication as a therapeutic intervention to overcome treatment barriers is consistent with Peplau's (1952) theoretical framework. Precision of Peplau's conceptualization can be increased in the current study by identifying barriers to patient-PHCP communication that can result in a lack of perceived support for taking or adhering to HIV medications. For example, lack of trust between the woman and her PHCP may be a barrier that manifests itself as difficulty in taking prescribed medications.

### Non-adherence

A large body of research has focused on non-adherence in HIV-infected patients. Factors that have been shown to negatively influence medication adherence include the side effects associated with antiretroviral medications, lifestyle issues, lack of knowledge or inability to understand the importance of adherence, and difficulty in taking the medication (Tennenburg, 1999). Research by Catz and colleagues (2000b) suggests that social support and



confidence can predict medication adherence in HIV-infected patients. Additionally, non-adherent patients were more likely to report difficulty in taking their medication than adherent patients. Complicated instructions given by the PHCP and poor understanding of the importance of prescribed therapy were particular barriers to taking medications. Providers need to be supportive and willing to intervene by helping their patients organize, plan, and problem solve how to best take their medication. Patients with adequate social and emotional support have been found to be more likely to follow complex medication regimens (Catz et al., 2000b).

### **Individualism**

It is necessary for healthcare providers to look at each patient individually in order to determine factors that may influence their ability to take HIV medications (Burke & Dunbar-Jacobs, 1995; Liu et al., 2001). A study by Knobel and colleagues (1999) focused on the need for individual patient assessment and its impact on medication adherence. These authors report that individualized treatment planning resulted in better medication adherence in HIV-infected patients.

Piscitelli and Flexner (2000) identified methods to assist with the administration of complicated drug regimens in HIV-infected patients. Their goal was to minimize drug non-adherence by teaching PHCPs to identify issues complicating therapy and common clinical problems leading to difficulty in taking medications. Open communication between the patient and the PHCP was essential. Medication regimens should be individualized to suit the patient's lifestyle, dietary habits, work schedule, and living conditions. The PHCP must take an active role in the design of medication regimens that work for patients (Piscitelli & Flexner, 2000; Weidle et al., 1999).

Liu and colleagues (2001) performed a comparison study among patients taking HIV drugs. They examined multiple measures of adherence of patients taking HIV drugs, and found that different measures, applied to the same patient, showed different levels of adherence among patients. The three measures most commonly used are Medication Event Monitoring System, pill count, and interview. Findings from this study indicate the need for looking at each patient individually in order to determine which measure of adherence gives the most accurate account of adherence in a particular patient.

### **LINKING THE CONCEPTS**

The concepts of caring, trust, communication, individualism, barriers, support, and connection are repeatedly identified in the literature. The establishment of a caring, trusting relationship that facilitates communication between the patient and PHCP is important for planning and implementing care of HIV+ women.

Communication is vital in order to build trust. A trusting relationship with the PHCP can lead to positive decision-making on the part of the HIV+ woman (Sowell et al. 1999). Active listening and other communication skills can create a positive, emotional connection between the patient and the care provider (Dingman et al., 1999). This positive connection allows the patient and the PHCP to grow in the relationship together, instill a feeling of hope for the HIV+ woman, and decrease her fears that she may be receiving biased care (Preston et al., 2000). Relationships between patients and PHCPs that are based on trust, respect, and effective communication, increase patient satisfaction and adherence (Belzer, 1999).

Individualized treatment is necessary in reducing barriers to treatment. Individualized care can instill a feeling of confidence and support in the patient, and feelings of confidence and support can contribute to a positive connection between PHCPs and HIV+ women. PHCPs must identify barriers that affect each patient individually in order to meet patient care goals (Stuifbergen et al., 2000).

The overlapping and inter-relatedness of the concepts of caring, trust, communication, support, individualism, barriers,

and connection serve to link the operational variables of patient-PHCP relationship and medication adherence. Evidence of these overlapping and interrelated concepts supports the empirical precision of Peplau's theory for this study. Phases and concepts overlap simultaneously within the relationship between a PHCP and an HIV+ woman.

## **METHODS**

### **Design**

This study employed a descriptive, correlational design to identify factors associated with difficulty in taking medications in a group of HIV-infected women. Data were collected in the fourth interview of a longitudinal study examining factors influencing reproductive decision-making and decisions to take antiretroviral medications if becoming pregnant. Participants represented a convenience sample of women drawn from the client base of twelve health clinics and AIDS Service Organizations in Georgia, North Carolina, and South Carolina.

Prior to the larger study, a series of seven focus groups were conducted with 54 HIV-infected women to ensure the cultural appropriateness and relevance of study variables and data collection methods. Participants in the focus group sessions were recruited from the population of HIV-infected women from which the larger descriptive study sample was drawn. Based on the input from these women, study instruments were revised, new measures were developed, and study methods were refined. To respect the women's expressed preferences, direct questions and short instruments were used for data collection when possible. Therefore, study methods and measures used to collect the data reported in this report were culturally relevant to the study population.

Female research assistants, who were specially trained for data collection with HIV-infected women, screened potential participants to insure they met study criteria. Privacy and comfort were facilitated for participants by allowing the women to assist in choosing the site for study interviews. All questions were read to the women, and their answers were recorded verbatim. Each interview lasted approximately 2 hours. Following the interviews, women were paid a stipend for their participation.

### **Sample**

Participant selection criteria for the overall study included: a) verified HIV-seropositive status; b) 18 to 49 years of age; c) able to become pregnant; d) not currently pregnant; e) no evidence of dementia; and f) English speaking. The sample for this analysis consisted of 120 women who completed the fourth interview of the larger study and responded to a single item asking them to rate the level of difficulty they experienced in taking their medications.

### **Instruments**

#### ***Patient-PHCP relationship***

Patient-PHCP relationship was measured using The Relationship with Primary Health Provider Scale (RPHCPS), a 12-item, Likert-type scale that was developed by Sowell and associates (1992) for use in a previous study. The four-point ordinal scale rated responses from strongly disagree to strongly agree. Women were asked to answer questions about their relationship with their PHCP. The scale items were developed in focus groups of HIV-infected women. The manner in which this scale was developed supports its validity and cultural sensitivity for use in this sample of women. A higher score indicates a better relationship with one's PHCP. Psychometric data for the instruments used in this study are presented in Table 1.

#### ***Difficulty taking medication***

A visual analog scale was used to measure and HIV-infected woman's difficulty in taking medication. Women in the study who were currently taking antiretroviral medication were asked to rate how difficult it was to take prescribed medication on a scale



**Table 1. Psychometric Properties of Instruments in This Sample**

INSTRUMENT	M	SD	POTENTIAL RANGE	ACTUAL RANGE	$\alpha$
Difficulty Taking HIV Drugs (DTHD)	3.8	2.8	1 to 10	1 to 10	NA
Relationship with Primary Healthcare Provider Scale (RPHCPS)	37.0	5.8	12 to 48	21 to 48	.92
HIV-specific Emotional Support Scale (HESS)	24.9	8.7	0 to 45	6 to 45	.79
HIV-specific Tangible Support Scale (HTSS)	17.9	7.4	0 to 36	3 to 36	.93
Present Life Satisfaction Scale (PLSS)	51.2	13.2	10 to 70	10 to 70	.92
Family Apgar Scale (FAS)	12.8	5.3	5 to 20	5 to 20	.94
HIV-related Symptoms Scale (HRS)	23.9	4.0	19 to 36	19 to 36	.83
AIDS Beliefs and Perceptions Scale (ABP)	49.1	5.5	23 to 96	29 to 72	.72
Antiretroviral Side-effects Scale (ASE)	37.7	11.4	18 to 72	23 to 71	.93
Herth Hope Index (HHI)	37.3	5.1	12 to 48	23 to 48	.91

of 1 (not at all difficult) to 10 (very difficult). A visual analog scale is a valid and reliable measurement because this single item measures difficulty in taking medication directly, and a visual analog scale is sensitive to small changes. The scale quantifies dimensions of the variable being measured (Burns & Grove, 2001).

**HIV-specific emotional support**

The HIV-specific Emotional Support Scale (HESS), developed from data from two focus groups prior to this study, was used to measure HIV-specific emotional support. Women were asked to use this 15-item ordinal scale to rate their perception of support received from family members, friends, and health professionals, and others since being diagnosed with HIV. The response choices for each item were not supported, somewhat supported, very supported, have not told, and not applicable. A higher score indicates greater perceived HIV-specific emotional support.

**HIV-specific tangible support**

The HIV-specific Tangible Support Scale (HTSS) was developed in two focus groups of HIV-infected women from the pilot study and used to measure HIV-specific tangible support. The 12 items of this ordinal scale aim to identify individuals that have assisted the women with tangible support during difficult times. Family members, other relatives, friends, co-workers, church groups, support groups, sex partner(s) were rated as being not helpful at all, a little helpful, very helpful, or not applicable. A higher score indicates greater perceived HIV-specific tangible support.

**Present life satisfaction**

Present life satisfaction was measured using the Present Life Satisfaction Scale (PLSS). This 28-item scale measures life satisfaction on a 10-step Cantril's Ladder (Cantril, 1965). The domains measured by this scale are physical status, family and friends, emotional status, financial state, spiritual well-being, peace of mind, and overall satisfaction with life. Women were asked to indicate where on the 10-step scale they presently stand. A higher score indicated greater present life satisfaction.

**Family functioning**

Perceived family functioning was measured using the Family Apgar Scale (FAS). This five-item scale measures satisfaction with family functioning. The response choices for the FAS are always, almost always, some of the time, hardly ever, and not applicable. A higher score indicates better family functioning (Smilkstein

1978, 1981; Smilkstein, Ashworth, & Mantanao, 1982).

**HIV-related symptoms**

HIV-related symptoms were measured using a 19-item dichotomous scale developed for use in this study. The women responded yes or no for each of the 19 symptoms. The scale lists common symptoms that many HIV-infected women experience, such as diarrhea, night sweats, or vaginal infections. HIV-related symptoms that are experienced are summed. A higher score indicates that an HIV-infected woman is experiencing a greater number of HIV-related symptoms.

**AIDS beliefs and perceptions**

The AIDS Beliefs and Perceptions Scale is a four point, 18-item scale that was used to measure AIDS beliefs, perceptions. Response choices ranged from strongly disagree to strongly agree. Included in the measurement were beliefs and perceptions about the outcomes of having HIV infection for themselves and their babies as well. A higher score indicates a more positive perception about an individual's ability to manage and live with HIV disease.

**Antiretroviral medication side effects**

The Antiretroviral Side-effects Scale (ASE) measured the relative frequency of side effects that are sometimes associated with taking antiretroviral medication. Side effects were rated on a 24-item, four-point response scale ranging from never occurring to occurring all the time. Specific side effects included in the scale were those reported by pharmaceutical companies and those reported in the literature. Side effects reported by women in the focus groups conducted prior to this study were also included in the scale. A higher score indicates greater frequency of side effects from antiretroviral medications.

**Hope**

Hope was measured using the total score for the abbreviated Herth Hope Index (HHI). (Herth, 1992). The HHI is a 12-item instrument that was adapted from the 30-item Herth Hope Scale (Herth, 1991). Criterion-related and divergent validity has been supported through prior research. Exploratory factor analysis has supported the construct validity of this instrument by the isolation of three factors (temporality and future, positive readiness and expectancy, and interconnectedness) that explain 41% of the variance. A higher score indicates greater hope.

**DATA ANALYSIS**

Descriptive statistics were calculated for all variables used in this analysis. Descriptive statistics included frequency, percent-



**Table 2. Demographic Characteristics of the Sample**

CHARACTERISTIC	FREQUENCY	PERCENTAGE
<b>Ethnicity/Race</b>		
African-American	109	90.8
Caucasian	11	9.2
<b>Relationship Status</b>		
Single	85	73.9
Partnered	30	26.1
Other	5	
<b>Paid Job</b>		
Yes	49	41.2
No	70	58.8
Missing	1	
<b>Annual Household Income</b>		
\$0 to 4,999	20	17.5
\$5,000 to \$9,999	41	36.0
Greater than \$10,000	53	46.5
Missing	6	
<b>Type of Residential Area</b>		
Urban	64	54.7
Suburban	33	28.2
Rural	20	17.1
Missing	1	
<b>HIV Disease Status</b>		
HIV asymptomatic	65	54.6
HIV symptomatic	36	30.3
AIDS	18	15.1
Missing	1	

ages, means, and standard deviations. Correlations among the study variables were tested using Pearson's r coefficient of correlation. All variables that significantly correlated ( $p < .05$ )

with difficulty taking medications were entered into a backward stepwise selection model.

**RESULTS**

One hundred twenty women who were taking medications and completed the question concerning the level of difficulty they experienced in taking medications comprised the sample for this analysis. The demographic characteristics of the women in the study sample closely approximated the characteristics of women who receive services in the clinics and agencies from which participants were recruited. These women were predominantly single (74%), poor (54%), urban-residing (55%), African-American (91%) women. The women ranged from 20 to 48 years of age ( $m = 35.5$ ,  $sd = 6.5$ ). Seventy-seven percent of the women had completed high school or greater. The yearly household income for the participants averaged \$14,000 ranging from \$920.00 to \$60,000 per year. A majority of the women reported their stage of illness as asymptomatic (55%), while 30% were symptomatic, and 15% had progressed to AIDS. Table 2 provides a more detailed description of the characteristics of the women participating in the study.

To better understand the importance an HIV-infected woman places on the quality of the relationship with her PHCP, each of the items of the RPHCP was examined. The women's responses were collapsed into two categories - agree or disagree. Frequencies and percentages were calculated for each of the items in the RPHCP Scale. See Table 3.

Statistically significant inverse correlations ( $p < .05$ ) were observed between difficulty taking HIV drugs and relationship with PHCP ( $r = -.29$ ), HIV-specific emotional support ( $r = -.21$ ), present life satisfaction, ( $r = -.32$ ), family functioning, ( $r = -.31$ ), and hope ( $r = -.36$ ). Correlations among the variables in this study are presented in Table 4. These variables were entered into a backward stepwise selection model. In a three-step solution, only relationship with PHCP ( $F = 5.30$ ,  $p = .0235$ ) and present life satisfaction ( $F = 11.32$ ,  $p = .0011$ ) retained significance. Relationship with PCHP and present life satisfaction explained 22% of the variance in difficulty in taking HIV medications.

**Table 3. Frequencies and Percentages for Items in the Relationship with Primary Healthcare Provider Scale**

ITEM	AGREE		DISAGREE	
	FREQ.	%	FREQ.	%
My primary health care provider (PHCP) always tells me the truth.	114	95.0	6	5.0
I worry about my PCHP keeping information about me confidential.	99	82.5	21	17.5
My PCHP tries to give me the best care and treatment available.	110	91.6	10	8.4
I can trust my PCHP to explain my treatment so that I can understand.	107	91.2	13	10.8
There are some things I don't feel comfortable telling my PHCP.	87	72.5	33	27.5
I take my PHCP's advice about treating symptoms of my HIV.	*112	94.9	6	5.1
My PHCP is likely to report me to the Department of Family Services or other authorities if I'm not careful about what I tell him/her.	*96	81.4	22	18.6
My PCHP gives me accurate information about my health care treatment.	110	91.7	10	8.3
Sometimes I think my PHCP doesn't tell me everything about my health	99	82.5	21	17.5
I trust what my PHCP tells me.	108	90	12	10.0
I can talk to my PHCP about anything that concerns me.	99	82.5	21	17.5
My PHCP trusts me.	**97	82.9	20	17.1
* Missing data = 2 ** Missing data = 3				

**Table 4. Correlations among Study Variables**

VARIABLE	1	2	3	4	5	6	7	8	9
1. Difficulty taking HIV drugs									
2. Relationship with primary health care provider	-.2910 .0013								
3. HIV-specific emotional support	-.2095 .0222	.1956 .0075							
4. HIV-specific tangible support	-.1779 .0540	.0956 .1951	.7894 .0001						
5. Present life satisfaction	-.3194 .0004	.3369 .0001	.2724 .0001	.2723 .0002					
6. Family functioning	-.3124 .0005	.4094 .0001	.3877 .0001	.4630 .0001	.4724 .0001				
7. HIV-related symptoms	.1521 .1001	-.0895 .2244	.1155 .1154	.0241 .7456	-.3249 .0001	-.1377 .0596			
8. AIDS beliefs and perceptions	.0687 .4580	.3693 .0001	.0513 .4844	-.0135 .8557	.1065 .1447	.1503 .0390	-.1236 .0909		
9. Side effects of antiretroviral drugs	.1746 .0608	-.1849 .0181	.1085 .1668	.1069 .1757	-.2778 .0003	.0943 .2296	.7125 .0001	-.1185 .1308	
10. Hope	-.3585 .0004	.5486 .0001	.3927 .0001	.2877 .0003	.6035 .0001	.4718 .0001	-.1415 .0811	.2159 .0072	.2159 .0072

**DISCUSSION**

**Limitations**

The convenience sample used by the primary researchers was made up of HIV+ predominately poor, African-American women from the Southeastern United States. Because the sample was limited to one geographic location, the women were of childbearing age with risk for becoming pregnant, and all were in treatment, the results cannot be generalized to the entire population of HIV+ women. Despite these limitations, the findings of this study provide insight into psychosocial factors associated with the difficulty HIV-infected women experience in taking their medications.

The results of this study support the propositions of Peplau's Theory of Interpersonal Relationships. Peplau's theory postulates that the relationship between the nurse (healthcare provider) and the patient (HIV+ woman) makes a substantial difference in what each patient will learn and how the patient will set health goals for a positive outcome.

More sensitive adherence research instruments need to be developed for use in future studies. The literature identifies the difficulty of measuring adherence. At present, self-report is the most accurate way to assess the extent to which HIV-infected individuals are actually taking prescribed medications (Lui et al., 2001).

Findings from this study show a significant relationship between the patient-PHCP relationship and medication adherence in the HIV+ woman. Implications specific to clinical practice include the importance of communication within the patient-PHCP relationship, as well as the importance of recognizing barriers to communication and health-seeking behaviors. PHCP must elicit feedback about treatment problems to facilitate adherence and to empower the HIV+ woman to make informed choices. Individualized regimens are necessary to assess how

medications fit into patients' lifestyles. Support to assist women in the struggle with adherence should be comprehensive, non-judgmental, and considered a high priority in the delivery of HIV primary care.

Future research implications are multidisciplinary. The focus should be on education for providers who care for HIV+ women, methods to increase adherence to antiretroviral drugs, and development of new drugs with fewer side effects. Improved measures of adherence and research into how patient-PHCP relationships can be made more caring, trusting, and positive are also needed.

The findings of this study add to the body of knowledge for advanced practice nurses or other PHCPs, by clearly identifying the benefits of developing a positive relationship between the PHCP and the HIV+ woman. A positive, therapeutic relationship alone may contribute to better outcomes for HIV+ women.

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