

Status and relationship between health control and illness perception with psychosocial adjustment in HIV/AIDS-infected women

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Abstract

Introduction: Acquired immune deficiency syndrome (AIDS) is one of the major challenges and health threats worldwide. The purpose of this study was to determine a relationship between health control and perception of illness with psychosocial adjustment in human immunodeficiency virus (HIV)/AIDS-infected women.

Material and methods: This descriptive analytical study was performed on 240 female patients in 2019 from Iranian research center for HIV/AIDS at the Tehran Imam Khomeini Hospital. Eligible individuals were included in the study, and information were collected using three questionnaires, including psychosocial adjustment to illness, health locus of control, illness perception, and a demographic checklist. Data were analyzed using SPSS 16 software.

Results: According to the results of multiple linear regression test, the predictive variables determined 13.7% of criterion variables. Among the predictors, illness perception was the most positive predictor ($B = 0.220$) and the number of sexual partners was the most negative predictor ($B = 0.148$). In other words, by increasing a score to the illness perception, psychosocial adjustment increased to 13.9%, and with one person added to the number of sexual partners, 14.8% of psychosocial adjustment decreased.

Conclusions: According to the findings, illness perception is positively associated with psychosocial adjustment of patients. Illness perception can affect motivation, which leads to health promoting behaviors. On the other hand, the increase of sexual partners number has a negative relationship with the psychosocial adjustment of patients and confirms the importance and role of spouse support in promoting health.

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Introduction

Acquired immune deficiency syndrome (AIDS) and human immunodeficiency virus (HIV) are new and unique social phenomena that affects almost all aspects of social and economic life of people [1]. Women are more vulnerable to HIV because of their biological conditions, and they are susceptible to AIDS two to four times more than men [2]. Among them, epidemiological factors and low socioeconomic status of this group aggravate their vulnerability [3]. The number of women infected with the virus worldwide has reached more than 50% of all cases. In Iran, the rate of HIV-positive women has risen from 7% in 2015 to 11% in 2016 and 17% in 2017 [4].

The disease affects patients in terms of many social problems, social misconceptions, and public labels not only physically, but also mentally. The disease is socially undesirable in nature and therefore has important psychosocial consequences that require substantial psychosocial adjustment [5, 6]. Over the past few decades, the concept of psychosocial adjustment to illness has been strongly considered, and an appropriate adjustment enables the patient to provide changes, which guarantee good health [7]. Several factors are associated with favorable psychosocial adjustment, including social roles, physical health, and the individual's illness perception [8, 9].

In today's world, physical health and health control is perceived as an important achievement, which is greatly pursued in order to improve peoples' quality of life, avoid chronic illness and premature death; thus, contribution to prevention of illness in people with chronic diseases are very effective [10, 11].

People's behavior depends on their perceptions and understandings. Nowadays, people's perception of their illness is highly regarded, and is one of the most important factors affecting the quality of life of patients with chronic diseases. Illness perception is the patient's organized cognitive representation of his or her illness and the patient's belief in different aspects of his or her new condition [12].

Accordingly, considering the above-mentioned and the importance of the disease, especially the immune system disease, the present study was conducted. We aimed to determine the relationship between health control and illness perception with psychosocial adjustment in HIV/AIDS-infected women, referring to Behavioral Diseases Counseling Center at Imam Khomeini Hospital, Tehran, Iran.

This report is a part of the results of a larger study aimed at analyzing the path of social roles with psychosocial adjustment in women with AIDS.

Material and methods

Design

This descriptive analytical study was conducted in 2019 at Iranian Research Center for HIV/AIDS, Imam Khomeini Hospital, Tehran, which is a main referral center.

Participants and recruitment

According to the study by Plach *et al.* [8], considering alpha 0.05, beta 0.2, and correlation coefficient of social role quality, physical health, and well-being as 0.18, according to the following formula, the sample size was 240 persons. In order to increase the accuracy by 10% and a downfall, the sample size was considered as 250 individuals.

$$N = \left(\frac{Z_{\alpha} + Z_{\beta}}{C} \right)^2 + 3$$

$$C = \ln \left(\frac{1+r}{1-r} \right)$$

Inclusion criteria

Inclusion criteria involved Iranian nationality, having a profile at the center, 18-45 years of age, CD4 count less than 500 (according to the Centers for Disease Control and Behavioral Therapy), at least the minimum level of literacy, having a sexual partner, and not having any mental or physical problems preventing from attending the study.

Exclusion criteria

Exclusion criteria were as follows: using any psychotropic drugs, participants who could not answer the questions in a questionnaire, and incomplete survey.

Data collection and definition of term

The required data were collected using three questionnaires encompassing psychosocial adjustment to illness, health locus of control, and illness perception as well as a demographic and social checklist.

Demographic and social checklist

It is a researcher-made checklist that includes questions, such as age, education, wife and spouse occupation, marital status, insurance status, number of children, and method of infection.

Psychosocial adjustment to illness scale

The psychosocial adjustment to illness scale (PAIS) consisted of 46 items on a 4-point scale from zero to three, comprising 7 areas of healthcare orientation, occupational environment, home environment, sexual relations, range of family relationships, social environment, and psychological distress. The sum of scores of each component was divided by the number of items on that component, and the mean was considered as the adjustment score. The validity and re-

liability of this instrument was estimated in Iran in 2013, in which the Cronbach's α coefficient was 0.94 [13]. In the present study, the reliability of instrument in the target group was evaluated and the results of Cronbach's α was 64.1.

Illness perception questionnaire

The questionnaire consisted of 9 subscales designed by Broadbent *et al.* based on the revised form of the same questionnaire. The range of the first 8 items ranged from 1 to 10. The ninth item was open-ended and assessed three major causes of disease. Each subscale measured one component of the illness perception. The validity and reliability of this tool have been studied by Bazazian in Iran. Cronbach's α for this questionnaire was 0.8, and test-retest reliability coefficient in an interval of 6 weeks for different items ranged from 0.42 to 0.75 [14]. The present study evaluated reliability of the tool in the investigated group and Cronbach's α was 62.4.

Health locus of control questionnaire

This questionnaire was developed by Walton and De-Valice in 1978, and consisted of 18 items within 3 subscales (internal belief, extrinsic belief, and extrinsic belief of chance) and each of the scales included 2 items that were scored based on a 6-point Likert scale from completely disagree (1) to completely agree (6); therefore, each person's score varied from 6 to 36 for each subscale. It has been translated in Iran for the first time by Meshki, Ghofrani Pour, Azad Fallah, and Hajizade, and for every component of internal control source, external control source, or power of others and chance, the coefficients were 70%, 75%, and 69%, respectively [15]. In the present study, the reliability of each dimension in the target group was re-evaluated, and the results of Cronbach's α were 47.5 for internal source, 59.2 for external source, and 58.6 for chance.

Procedures

After obtaining the required authorization from relevant authorities, the researcher was present at the Iranian Research Center for HIV/AIDS, Tehran Imam Khomeini Hospital. After the selection of eligible individuals and stating the objectives of the study, written consent was obtained from every participant. Then, study questionnaires were provided to participants. It should be noted that there was no time limit for completing the questionnaires. If one session was not sufficient to complete the questionnaires, the participants were invited for a next visit, and the questionnaires were completed in a separate room from the other persons. The researcher was present at the center to answer all additional questions. After completing the questionnaires, the data were entered into SPSS 16 software and analyzed using descriptive analytical tests, such as ANOVA and linear regression.

Ethical considerations

This study was approved by the ethics committee of Alborz University of Medical Sciences, ABZUMS. REC.1397.195 and by the ethics committee of Iranian Research Center for HIV/AIDS, Tehran Imam Khomeini Hospital, IR.TUMS.VCR.REC.1398,435.

Results

In the present study, data of 240 women with immune deficiency who were attending Iranian Research Center for HIV/AIDS, Tehran Imam Khomeini Hospital were analyzed. According to the results, most of the women were between 30 and 40 years old (47.1%), having one sexual partner (88.3%), and no insurance (60%) (Table 1). In the present study, the mean score of home environment dimension was higher than other dimensions in the evaluation of psychoso-

Table 1. Individual social profile of participants

Variables	n (%)
Age (year)	
Less than 20	2 (0.8)
20-30	54 (22.5)
30-40	113 (47.1)
40-50	71 (29.6)
Number of sexual partners	
0	1 (0.4)
1	212 (88.3)
2	12 (5.1)
3 and more	15 (6.2)
Number of children	
Zero	51 (21.3)
1	72 (30.0)
2	56 (23.3)
3 and more	61 (25.4)
Education	
Illiterate	30 (12.5)
Elementary and middle school	113 (47.1)
High school and diploma	89 (37.1)
Graduate and bachelor's degree	8 (3.3)
Marital status	
Single	12 (5.0)
Permanent marriage	116 (48.3)
Temporary marriage	30 (12.5)
Divorce	32 (13.3)
Insurance status	
Yes	96 (40.0)
No	144 (60.0)

Table 2. Psychosocial adjustment status of physical health and women's perception of immunodeficiency in the study participants

Variable	Mean	SD
Psychosocial adjustment		
Healthcare	9.8	3.2
Occupation	8.2	2.3
Home environment	10.7	2.8
Sexual relations	8.3	2.1
Family relationship	6.3	1.8
Social relations	7.4	2.5
Psychological	10.4	1.6
Total score	61.0	8.8
Healthcare		
External source	26.2	5.0
Internal source	22.9	5.5
Chance	28.3	4.7
Illness perception	43.3	12.9

Table 3. Relationship between individual-social determinants, illness perception, and physical health with psychosocial adjustment in women suffering from immune deficiency participating in the study

Predictive variable	B	S.E.	Beta	t	p-value
Constant value	48.586	5.817	–	8.352	< 0.001
Age (year)	0.618	0.782	0.052	0.791	0.430
Education					
Illiterate	–1.088	1.772	–0.041	–0.614	0.540
High school and diploma	–0.495	1.254	–0.027	–0.395	0.693
Associate of art and bachelor's degree	5.245	3.102	0.107	1.691	0.092
Job					
Worker	–0.417	1.966	–0.014	–0.212	0.832
Daily payment	4.269	2.992	0.092	1.426	0.155
Employee	–1.120	3.866	–0.018	–0.290	0.772
Unemployed	–0.561	1.972	–0.018	–0.248	0.776
Free	5.640	1.966	0.181	2.868	0.005
Marital status	0.417	0.394	0.068	1.060	0.290
Insurance status (no)	–2.221	1.209	–0.124	–1.837	0.068
Number of children	–0.408	0.484	–0.058	–0.843	0.400
Income (millions)	–3.036	1.623	0.131	–1.870	0.063
Number of sexual partners	–1.772	0.784	–0.148	–2.260	0.025
Relationship duration (year)	–0.039	0.464	0.006	–0.084	0.934
Duration of disease (year)	2.071	1.965	0.066	1.054	0.293
Internal source	0.113	0.147	0.064	0.768	0.443
External source	0.062	0.119	0.039	0.521	0.603
Chance	0.265	0.141	0.143	1.878	0.062
Illness perception	0.139	0.045	0.203	3.077	0.002

cial adjustment (10.7 ± 2.8), and in health locus of control, the dimension of chance control presented the highest mean (28.3 ± 4.7).

According to the results of multiple linear regression test, predictive variables determined 13.7% of changes in the variable criterion. Variables, such as occupation, illness perception, and number of sexual partners were significantly correlated with psychosocial adjustment, in which, the variables of illness perception was the most positive predictors ($B = 0.220$) and the number of sexual partners was the most negative predictor ($B = -0.148$). In other words, by increasing one score to the illness perception, psychosocial adjustment increased to 13.9%, and with one person added to the number of sexual partners, 14.8% of psychosocial adjustment decreased.

Discussion

According to the findings, there was a significant relationship among variables such as occupation, illness perception, number of sexual partners, and psychosocial adjustment. Illness perception variable was the most positive predictor,

whereas the number of sexual partners was the most negative predictor. When a person had a high level of control over the illness, more sensible behavior was observed in improving one's health. Illness perception affects motivation, and the stronger the belief, the more active the individual is and more likely will achieve the specific goal [16]. The results of this study are in line with the findings of several studies, including Abubakari *et al.*, who concluded that the resilience and understanding of the disease play a role in the development of cardiovascular complications in diabetic patients, so that the higher the perception of the disease, the better the self-management and psychosocial adjustment to illness [17]. Moreover, Mosleh *et al.* observed that people with coronary heart disease, who had a high understanding of their disease, presented better health behaviors, followed their treatment, and thus were more adapted to their disease [18]. On the other hand, Clarke *et al.* postulated that patients with chronic kidney disease, who were in early stages of the illness, were more likely to experience depression and anxiety because of their poor understanding of the disease, which made them less adjusted to their illness [19].

In this study, another variable that was associated with psychosocial adjustment in patients with immune deficiency disease was the number of sexual partners. The results showed that with the increase in number of sexual partners, a decrease of psychosocial adjustment was noted. Bennich *et al.* in their study on the supportive role of family and spouse in diabetic patients, found that family, especially spouse, play an important role in maintaining lifestyle changes, diabetes self-management, including diet management, medication use, and blood glucose monitoring, and therefore, helping the patient to adapt to his condition [20].

In a study by Keshia *et al.* on a population of pregnant and recently delivered women, it was observed that social help, family support, and especially spousal support played a significant role in reducing depression and better adjustment to this period [21]. In another study conducted on the number of sexual partners by Ashenhurs *et al.*, it was found that people who had more sexual partners, with an increased risk of STI and unwanted pregnancies due to lack of protective health behaviors, and mentally affected, those individuals shown lower self-esteem and consequently, poor psychosocial adjustment [22]. In other words, people with higher support had a better ability to overcome the adverse consequences of illness [23].

In the present study, among the dimensions of health locus of control, chance control had the highest mean score between HIV/AIDS-infected women. However, in the present study, after adjusting the variables, the variables mentioned were not significantly correlated with psychosocial adjustment. Although in a study by Stasiak *et al.*, the lives of people with disabilities admitted that all aspects of one's life undergo extensive changes in conditions of loss of motor function, such as spinal cord injury. To support these patients, the external locus of control, including the implementation of rigorous interventions as well as educational programs, lead to improvements in various areas of psychological functioning among the disabled,

Table 4. Summary of multiple linear regression model for predicting the relationship between individual social determinants, illness perception, and physical health with psychosocial adjustment

	R	R ²	Adj. R ²	S.E.
1	0.438	0.191	0.137	8.179

and their adaptation to such a condition is more favorable [24]. Wong *et al.* examined the role of health locus of control in people with chronic pain and observed that in multidimensional health locus of control scale, chance dimension is a potential predictor of psychiatric complications, such as depression in patients with chronic pain [25]. Furthermore, Mostafavian *et al.* in their study on health and quality of life control in people with HIV, reported that these patients believed that their health was more influenced by individual actions and behaviors, which significantly influenced their quality of life [26]. The reason for the lack of a significant relationship between health locus of control and psychosocial adjustment in the present study could be the type of tests performed and adjusting the variables affecting the psychosocial adjustment variable.

Conclusions

According to the findings, illness perception presented the most positive predictive relationship with patients' psychosocial adjustment. As illness perception can affect motivation, it can lead to health promoting behaviors, and on the other hand, increasing the number of sexual partners has a negative relationship with the psychosocial adjustment of patient, confirming the importance and role of spouse support in promoting health.

Limitations of the study

In the present study, only female patients with immunodeficiency were included, and the role of spouse and partner due to restriction of access was not investigated, which was one of the limitations of the study.

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Conflict of interest

The authors declare no conflict of interest with respect to the research, authorship, and/or publication of this article.

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