The relationship between self-concept and adherence to medication regimens in patients with hypertension in Urmia, Iran

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Abstract

BACKGROUND: Hypertension is one of the most common risk factors for cardiovascular disease and premature mortality. Identifying of the factors that influence adherence to medication regimens can improve the quality of care in patients with hypertension. The purpose of this study is finding the relationship between cognitive self-concept and adherence to medication regimens in patients with high blood pressure.

METHODS: Using a descriptive correlational design, a convenience sample of 108 hypertensive patients were selected from Taleghani Hospital, affiliated with Urmia University of Medical Sciences in Iran. The two validated and reliable questionnaires of Cognitive Perception of Cardiovascular Healthy lifestyles and Adherence questionnaires were completed by each patient.

RESULTS: A direct relationship between challenges to self-concept and adherence to prescribed medication regimen was noted ($P < 0.01$). Threat to self-concept had an inverse relationship to adherence ($P < 0.01$). In other words patients who faced more challenge and less threat to self-concept adhered more to their prescribed medication regimen.

CONCLUSION: Nurses should be looking for strategies and interventions such as education and counseling to stop patients with hypertension from seeing their medication regimens as a threat and empower their patients to perceive hypertension as a challenge to better adhere to the prescribed medication regimen.

Keywords: Self-concept, Hypertension, Cognitive Perception, Medication Regimen

Introduction

Hypertension is the most common risk factor of cardiovascular disease that leads to myocardial infarction, cerebrovascular accident, heart failure, visual disturbances, renal failure and premature death.[1] Hypertension is prevalent in 24% of people aged 18 years and older, and this ratio grows with the increasing of age.[2] In a study conducted in Iran, hypertension prevalence has been reported 25% in the total population and 32% in adults.[3] Javadi showed that only 5% of high blood pressure patients, who were aware of their disease, were receiving regular medication and their blood pressure had been controlled.[4] A study in Egypt showed that the information received about hypertension was 37.5%, the rate of medication receiving was 23.9% and rate of blood pressure control was 8%.[5] These rates in the USA have been reported about 65%, 49% and 21% respectively.[6] The main cause of uncontrolled high blood pressure is failure to adhere to treatment regimen. Therefore, by not using the prescribed medication regimen the risk of uncontrolled hypertension is doubled.[7] Adherence to treatment regimen consists of how much a person's behaviors (taking medications, diet and lifestyle changes) are consistent with medical advices.[8]

Although adherence to therapeutic regimens has been vastly researched and published, poor adherence to medical recommendations remains a substantial problem among people with cardiovascular disease.[9,10] It is well established that many patients either intentionally or unintentionally fail to adhere to the prescribed treatments.[11,12] (11, 12) Therefore, understanding the contributing factors to patients' adherence to their therapeutic regimen is essential for achieving positive results. Identifying these determinants enhance nursing performance and improve patient adherence to prescribed health regimens. Psychological aspects such as self-concept are among the most important factors that should be identified and scrutinized in individuals with cardiovascular disease.[13] Self-concept is a composite of beliefs and feelings about oneself at a given time and is formed by internal perceptions and perceptions from the reactions of others. Self-concept emphasizes the psychological and mental aspects of the individual

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and plays a major role in directing the individual's behavior.[14] The results of studies on the relationship between self-concept and adherence to treatment regimens are contradictory.[15] Many researches have been done about antihypertensive treatment regimens in other countries, but there is a lack of studies in this field in Iran. Based on the burden of cardiovascular disease on public health, it is necessary to perform studies in this field. Therefore, this study was conducted to examine the relationship between self-concept cognitive perception (threat and challenge) and adherence to the recommended medication regimens among Iranian patients with hypertension.

Materials and Methods

In a descriptive correlational study, 108 hypertensive patients were conveniently recruited from Taleghani Hospital that is affiliated with Urmia University of Medical Sciences in Iran. 23 hypertensive patients were included in the pilot study to calculate the sample size. A α level of 0.05 and a power of 0.8 were respectively used to control types I and II errors. The inclusion criteria consisted of patients who had high blood pressure (above 130/80) for at least one month and their disease was approved by a physician. The research tools consisted of Cognitive Perception of Cardiovascular Healthy Lifestyle Questionnaire (CPCHL Questionnaire) and adherence questionnaires. In order for this questionnaire to be used for hypertensive patients some minor changes needed to be made. This questionnaire measures 2 subscales of threat and challenge and includes 57 questions (31 items addressed threat to self-concept and 26 items were about challenge to self-concept). These questions consisted of 12 questions about body sensation aspect, 13 questions about body image aspect, 15 questions about self-consistency aspect, 5 questions about self-ideal aspect and 15 questions about self-moral-ethical-spiritual aspect. The total score for challenge ranged from 26 to 104 and for threat ranged from 31 to 124. The adherence questionnaire was used to examine the patients' level of adherence to their medication regimen and includes 4 questions. The score for this questionnaire ranged from 4-12. The translation of the questionnaire in Persian and also the adherence questionnaire were piloted among 10 nursing faculty members for instrument validity and reliability coefficient of 0.74, with threat subscale score of 0.85 and challenge subscale score of 0.84. Cronbach's α for the revised adherence questionnaire was 0.92. Data were analyzed by SPSS software and by using the Pearson Correlational analysis, Mann-Whitney U and Kruskal-Wallis tests.

Results

57.4% of the subjects were males, 42.5% were females and their average age was 58 years. Most of the subjects (75.9%) were married and 6% were single. Other demographic data relating to the research subjects are listed in Table 1. The average of patients' adherence to their medication regimen was 54.9%.

With regard to the main objectives of the study, the findings showed that cognitive perception of health regimens as a threat had an inverse relationship with adherence to prescribed medication regimen (Table 2). In addition, cognitive perception of health regimens as a challenge had a direct relationship with adherence to the regimen (Table 3). The results of the Mann-Whitney U and Kruskal-Wallis tests showed that variables such as age, sex, level of education and occupation were not important factors in adherence to medication regimen.

Table 1. Participants' demographic data

Demographics	n	%
Male	62	57.4
Female	46	42.5
Married	82	75.9
Single	6	5.5
Separated/Divorced	20	18.5
Academic	10	9.2
High school	37	34.2
Pre-high school	28	25.9
Primary school	33	30.5
Worker	20	18.5
Business	31	28.7
Retired	32	29.6
Homemaker	25	23.1

Table 2. Relationship between cognitive perception of self-concept as a threat and adherence to medication regimen

Self-concept Component	Adherence to medication regimen
Body sensation	-0.34
Body image	-0.31
Self-consistency	-0.32
Self-ideal	-0.32
Self-moral-ethical-spiritual	-0.28
Total Self-concept	-0.35

$P \le 0.01$ for all correlation

Table 3. Relationship between cognitive perception of self-concept as a challenge and adherence to medication regimen

Self-concept Component	Adherence to medication regimen
Body sensation	0.34
Body image	0.36
Self-consistency	0.32
Self-ideal	0.35
Self-moral-ethical-spiritual	0.27
Total Self-concept	0.36

$P \leq 0.01$ for all correlation

Discussion

The findings of this study showed that a threat to the self-concept (including body sensation, body image, self-consistency, self-ideal and moral-ethical-spiritual self) has an inverse relationship with regimen adherence. However, a challenge to self-concept and its components is positively related to regimen adherence. In other words, the perceived threats to self-concept from therapeutic regimen in hypertensive individuals resulted in a manifestation of emotion-based responses and in turn in non-adherence to health regimen. On the other hand, individuals with high blood pressure who felt challenged by the health regimen adhered more to the regimen. In the study by Thomas a similar relationship was found between cognitive perception as a challenge and as a threat to adherence to health regimen among patients with Heart Failure.[16] This finding also corresponds with the results of a study by Carpenter regarding the relationship between cognitive perception and adherence to self-care behavior in diabetics[17], and the research by Hamama-Raz and Solomon on psychological adjustment of melanoma survivors. Hamama-Raz and Solomon concluded that perceiving a challenge to self-concept manifests a better adaptation to the disease and results in an increased feeling of wellness.[18]

Concerning body sensation, which is recognized as how one feels and experiences the self as a physical being, the present research hypothesizes that one reason that threat and challenge are connected to body sensation and health regimen adherence is the different bodily experiences that individuals with high blood pressure have in relation to their disease. This can influence the type of response and the level of adaptation to the situation. Johnson and Leventhal found that instructions along with explanation on body sensations can result in better adaptation and cooperation by patients.[19]

The findings showed a meaningful relationship between threat and challenge to body-image and adherence to medication regimen of hypertensive patients. These findings are congruent with those of Thomas,[16] Checko,[20] Joyce,[21] and Ebbeskog and Ekman[22]. Old age and chronic disease can have a significant impact on the individual's body image.[23] Major physical changes resulting from high blood pressure can affect an individual's body image, which in turn can influence behavior.

The findings of this study showed a correlation between threat and challenge to self-consistency and adherence to therapeutic regimen. The individual strives for self-consistency to sustain and protect self from any conflict.[24] Negative emotions from threats to self-consistency that are manifested by a change in daily routines due to special health regimen in individuals with high blood pressure result in a non-adherence to the regimen. However, positive emotions resulting from challenge to self-consistency that produce efforts in the individual to return to daily routines and adapt to the health regimen manifests an adherence to the regimen. This study supports the results of the study done by Thomas,[16] and Zhan[25]. Zhan observed the relationship between adaptation and self-consistency in hearing-impaired elderly individuals. Zhan illustrates how cognitive processes significantly contribute to self-consistency among older adults with hearing loss.[25]

The findings of this study showed a relationship between self-ideal and health regimen adherence. Self-ideal is related to the individual's aspirations. The individual's emotions for achieving special goals are based on the individual's power and control.[24] This could be a way in which challenge and threat to self-ideal can relate to health regimen adherence. Although a challenge to self-ideal manifests a feeling of power and control in an individual to positively adhere to medication regimen, a threat to the individual's self-ideal could adversely affect adherence by creating a feeling of powerlessness and lack of control. These findings are comparable with the findings of Thomas,[16] and Caserta and Gillett[26].

Finally, in this research a threat to the moral-ethical-spiritual self had an inverse, meaningful but weak relationship with adherence to medication regimen. This result is incongruent with the findings of Thomas.[16] The moral-ethical-spiritual self is a belief system that appraises the environment in relation to who the individual is in the universe.[24] The difference in cultural beliefs may have influenced the difference in the results. Moreover, high challenge perception by the moral-ethical-spiritual self was positively related to adherence. In other words, a challenge to the moral-ethical-spiritual self by regimen

adherence is a value that is directly related to adherence to health regimen.

Acknowledgments

Conflict of Interests

Authors have no conflict of interests.

References

1. Levy D, Larson MG, Vasan RS, Kannel WB, Ho KK. The progression from hypertension to congestive heart failure. JAMA 1996; 275(20): 1557-62.
2. Valles M, Mate G, Bronsoms J, Campins M, Rosello J, Torguet P, et al. Prevalence of arterial hypertension and other cardiovascular risk factors among hospital workers. Med Clin (Barc) 1997; 108(16): 604-7.
3. Javadi HR. Prevalence of hypertension in Ghazvin. J Qazvin Univ Med Sci 1999; 3(1): 23-9. [In Persian].
4. Javadi H. Evaluation of awareness, treatment and drug consumption in hypertensives. J Qazvin Univ Med Sci 2000; 3(4): 59-64. [In Persian].
5. Kong BW. Community-based hypertension control programs that work. J Health Care Poor Underserved 1997; 8(4): 409-15.
6. Gnasso A, Calindro MC, Carallo C, De NG, Ferraro M, Gorgone G, et al. Awareness, treatment and control of hyperlipidaemia, hypertension and diabetes mellitus in a selected population of southern Italy. Eur J Epidemiol 1997; 13(4): 421-8.
7. Hadi N, Rostami N, Jafari P. Survey of determinants of adherence to drug regimen in patients with hypertension . Sci Med J Ahwaz Jundishapur Univ Med Sci 2005; 4(3): 223-9. [In Persian].
8. Kara B, Caglar K, Kilic S. Nonadherence with diet and fluid restrictions and perceived social support in patients receiving hemodialysis. J Nurs Scholarsh 2007; 39(3): 243-8.
9. Dunbar-Jacob J, Mortimer-Stephens MK. Treatment adherence in chronic disease. J Clin Epidemiol 2001; 54 Suppl 1: S57-S60.
10. Van DS, Sluijs E, van DL, De RD, Heerdink R, Bensing J. Patient adherence to medical treatment: a review of reviews. BMC Health Serv Res 2007; 7: 55.
11. Chung ML, Lennie TA, de JM, Wu JR, Riegel B, Moser DK. Patients differ in their ability to self-monitor adherence to a low-sodium diet versus medication. J Card Fail 2008; 14(2): 114-20.
12. Lehane E, McCarthy G. Intentional and unintentional medication non-adherence: a comprehensive framework for clinical research and practice? A discussion paper. Int J Nurs Stud 2007; 44(8): 1468-77.
13. Richardson LG. Psychosocial issues in patients with congestive heart failure. Prog Cardiovasc Nurs 2003; 18(1): 19-27.
14. Tomey AM, Alligood MR. Nursing theorists and their work. 4th ed. Philadelphia, PA: Mosby p. 248-50; 1998.
15. Burkhart PV, Rayens MK. Self-concept and health locus of control: factors related to children's adherence to recommended asthma regimen. Pediatr Nurs 2005; 31(5): 404-9.
16. Thomas CM. Self-concept cognitive perception and adherence to recommended health regimes in adults with heart failure [Online] 2004; Available from: URL: http://gradworks.umi.com/31/54/3154162.html/
17. Carpenter RD. Cognitive appraisal of perceived threat of diabetes and adherence to self-management behaviors [Online]. 2008; Available from: URL: http://gradworks.umi.com/33/26/3326470.html/
18. Hamama-Raz Y, Solomon Z. Psychological adjustment of melanoma survivors: The contribution of hardiness, attachment, and cognitive appraisal. Journal of Individual Differences 2006; 27(3): 172-82.
19. Johnson JE, Leventhal H. Effects of accurate expectations and behavioral instructions on reactions during a noxious medical examination. J Pers Soc Psychol 1974; 29(5): 710-8.
20. Checko ER. Personal Motivation, Body Image, Health Behavior and Stage of Exercising. New York, NY: ProQuest; 2007.
21. Joyce TA. Body Image and Treatment Adherence in Adolescents and Young Adults with Cancer. Texas, TX: Texas A & M University; 2001.
22. Ebbeskog B., Ekman SL. Elderly persons' experiences of living with venous leg ulcer: living in a dialectal relationship between freedom and imprisonment. Scand J Caring Sci 2001; 15(3): 235-43.
23. Thomas CM. The influence of self-concept on adherence to recommended health regimens in adults with heart failure. J Cardiovasc Nurs 2007; 22(5): 405-16.
24. Roy SC. The Roy Adaptation Model. 3rd ed. New York, NY: Prentice Hall; 2008.
25. Zhan L. Cognitive adaptation and self-consistency in hearing-impaired older persons: testing Roy's adaptation model. Nurs Sci Q 2000; 13(2): 158-65.
26. Caserta MS, Gillett PA. Older women's feelings about exercise and their adherence to an aerobic regimen over time. Gerontologist 1998; 38(5): 602-9.