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Health Locus of Control and its related factors among Iranian Pilgrims

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Abstract

Aim: Health locus of control includes the degree of a person's belief in the fact that his/her health is controlled by internal or external factors. The aim of this study was to determine the status of health locus of control and its related factors among Iranian pilgrims.

Methods: This cross-sectional study was performed on 600 pilgrims of the holy shrines in Tehran in 2015. People aged over 15 years who had come for pilgrimage to the shrines entered the study by convenient sampling and after consent. The A form of the Multi-dimensional Health Locus of Control scale was used. This form consists of Internal Health Locus of Control (IHLC), Powerful others (PHLC) and Chance External Locus of Control (CHLC). The relation of between age, gender, education, income, marital status and location of residence on each construct was evaluated by t-test, ANOVA and linear regression through SPSS21.

Findings: Among the total pilgrims, 302 were females (50.3%). The mean age of the participants was 33.15±11.06 years. The highest and lowest averages were associated with the internal locus of control (25.60±3.34) and the chance locus of control (18.20±5.13), respectively. There was a significant relationship between educational level and IHLC; between income and education level with CHLC; and between marital status and age with PHLC.

Conclusion: According to our results, most people think that they control their health or life events themselves. People with a higher internal locus of control score have more tendency to practice health promotion and disease prevention and seek health through visiting holy sites and appealing to God.

Keywords: Health Locus of Control, Internal Health locus of Control, Chance, Powerful others, Iran

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Introduction

Health locus of control (HLC) refers to the strength of a person's belief that his health is controlled by internal or external factors [1]. People who have external health locus of control (EHLC) believe that their success or failure depends on factors such as chance, powerful others, destiny, etc., and do not take responsibility for their own behavior. Instead, people who have internal health locus of control (IHLC) believe that certain events and happenings are the result of their actions; and their behavior and actions directly determine their own health [2-4].

HLC is considered as a variable affecting the development of health behaviors, treatment seeking, and health problems. IHLC is directly associated with knowledge and attitude, psychological state and health behaviors. In contrast, most external health control resources (powerful others and chance health locus of control) are associated with negative health behaviors and weak psychological state [5]. Therefore, it is expected that changes in people's knowledge, beliefs and attitudes would lead to behavioral changes and increase of self-care behaviors [6].

Several studies have been performed on the positive and negative effects of believing how life events are controlled. Shwartz showed that internal health locus of control is effective in the prevention of disease and increasing life expectancy [7]. Shapiro et al. also showed that people's beliefs affect their mental and physical health [8]. Grotz et al. in a study in Germany showed that age, low socio-economic status and immigration history were associated with powerful others chance and health locus of control [9]. Kuwahara et al. in rural Japan showed that older people, women and people with less education believe that external factors such as chance and powerful others affect their health status. Also people with adverse health behaviors such as smoking and abusive drinking believed more in the impact of external factors on health locus of control [10].

An external health locus of control is religion and belief in God. According to a survey conducted on adults in the USA, religious beliefs of people may be related to their perception of their health [11].

Nikoogoftar in a study conducted on diabetic patients showed that the external subscale of powerful people (doctors and specialists) has a significant and positive correlation with the patients' self-care behaviors so that the self-care behaviors of people were affected by the external health locus of control, which was "doctors" [12]. Also Aghamolaie et al. in their study on people in Bandar Abbas, Iran showed that internal locus of control and powerful others significantly explained health promoting behaviors [1].

Multidimensional Health Locus of Control (MHLC) is used to measure the scope of internal and external factors that have an effect on people's health. MHLC measures an individual's different perceptions of control that can affect his/her health. Internal Health Locus of Control (IHLC) evaluates if the person believes that he/she controls his/her health himself/herself and that nobody else is responsible for his/her health. Powerful others Health Locus of Control (PHLC) shows if the person believes that physicians and specialists have the power to control his/her health; and CHLC shows the person's belief in the power of fate and destiny in controlling his/her health. In other words, believing that if he/she is supposed to stay healthy, he/she will, and if he/she is supposed to get sick, he/she will, and he/she has no control over his/her health [13].

One of the most common religious behaviors of Iranians is to visit the holy places. Religious beliefs and ideas help them cope with their life problems [14, 15]. Accordingly, paying attention to psychological and social factors affecting self-care behaviors including health locus of control is an important step in managing the disease and reducing its complications. The aim of this study was to determine the state of health locus of control and its related factors among the Muslim pilgrims visiting Tehran Islamic holy shrines in 2015.

Method

This descriptive-analytical cross-sectional study was performed on Tehran holy shrines' pilgrims in 2015. Two areas in the north and south of Tehran were chosen and 10 out of the 36 shrines in these areas were randomly selected. The inclusion criteria were age over 15 and attending holy shrines for spirituality and prayers. Then, 600 people attending Tehran holy shrines were selected in the morning and afternoon by convenience sampling. We selected 20 samples for each of the eight independent variables. In addition, design effect for the current study was two. Also, 7% of the estimated sample was added to the sample size for potential nonresponding and improperly completed questionnaires. In total, 600 pilgrims were selected using multi-stage sampling. The research objective was fully explained to the participants, and they consented to participate in this study. Then they answered the questions.

Data collection tools

Multidimensional Health Locus of Control (MHLC) scale

The MHLC was designed by Wollaston et al. and has three versions (A, B and C). Versions A and B examine the overall status of health, while version C evaluates the perception of a particular disease [13]. In this study, version A was used, as is suitable for population

studies. This form has 18 items, each presented in the form of a sentence. Each item has 6 options including strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree. six out of the 18 items measure people's beliefs in terms of internal health locus of control and the other 12 items examine people in terms of factors such as chance, powerful others and physicians' health locus of control that represent the external health locus of control. A 6-point score is considered for these items (1-6) from strongly agree to strongly disagree. Therefore, the range of scores for each construct is between 6 and 36. Higher score presents higher internal or external locus of control, higher chance or higher effectiveness of powerful others (doctors and specialists) [2, 16]. Internal locus of control includes the person's belief about the influence of internal factors and personal behavior in health and disease. External locus of control (powerful others) includes the person's belief in the influence of others on his/her health. External locus of control (chance) includes the person's belief in the influence of chance and luck on his/her health [13].

The reliability and validity of this scale were verified in Iran by Moshki et al. and the Cronbach's alpha coefficients for internal, chance and powerful others' locus of control components were 0.70, 069 and 0.75, respectively [17].

Ethical approval for this study was obtained from the Research Ethics Committee of Semnan University of Medical Sciences, Semnan. Iran.

The dependent variable was the score of each construct of the MHLC questionnaire, and the independent variables were age, gender, education, marital status, citizenship, location of the shrine, person's income, and location of residence. In order to evaluate the relation between gender and the score of each construct, t-test was used. The relation between level of education and score of each construct was evaluated by ANOVA followed by the post- hoc tests. Lastly, linear regression was used to examine the influence of independent variables. The enter method was used for variable selection. In this study, the significance level was considered below 0.05. SPSS21 was used for the data analysis.

Results

Among the total of 600 pilgrims participating in this study, 302 were female (50.3%) and 298 were male (49.7%). The mean age of the participants was 33.15±11.06, and 363 (60.5%) of them were married. Most of the pilgrims were Iranian (566, 94.3%) and the rest were non-Iranian (Table 1).

Table 1: Participant's characteristics

Variable	Frequency	Percentage
Gender		
Male	298	49.7
Female	302	50.3
Nationality		
Iranian	566	94.3
Afghan	34	5.7
Living area		
Tehran	517	86.2
Township	83	13.8
Education level		
Elementary school	147	24.5
High school	234	39.0
University	219	36.5
Family monthly income (in Rials)		
No income	180	30.0
<10000000	268	44.7
≥10000000	152	25.3
Location of shrine		
North	300	50.0
South	300	50.0
Marital status		
Single, Widowed, Divorced	237	39.5
Married	363	60.5
	Mean (SD)	
Age	33.15 (11.06)	
IHLC	25.60 (3.34)	
PHLC	23.97 (4.0)	
CHLC	18.20 (5.13)	
Total	600	100

* Significant at 0.05 level.

Scores on the MHLC (Form A) were grouped into subscale scores according to Wallston et al. (1978). The means, of the responses were IHLC = 25.60±3.34; PHLC = 23.97±4.0 and CHLC= 18.20±5.13.

The highest and lowest averages were in the internal locus of control and chance locus of control, respectively. According to the t-test results, there was a significant difference between men and women in chance locus of control; it was higher among men (P = 0.036) (Table 2).

There was a significant difference between people with different educational levels in the area of chance locus of control. Based on the average score achieved in this area, people with university education believed less in chance in determining their health than those with a high school diploma or lower education levels (P <0.001) (Table 2).

Table 2: Health locus of control in demographic subgroups

Locus of control	Variable		Mean ± SD	P-Value
IHLC	**Gender**	Male	25.63 ± 3.40	0.813
		Female	25.57 ± 3.29	
	Education level	Elementary school	25.12 ± 3.72	0.069
		High school	25.58 ± 3.27	
		University	25.94 ± 3.11	
CHLC	**Gender**	Male	18.64 ± 4.97	0.036*
		Female	17.76 ± 5.24	
	Education level	Elementary school	18.82 ± 4.77	<0.001*
		High school	18.95 ± 4.93	
		University	16.98 ± 5.35	
PHLC	**Gender**	Male	25.57 ± 3.99	0.182
		Female	23.75 ± 4.01	
	Education level	Elementary school	23.88 ± 4.01	0.080
		High school	24.41 ± 3.86	
		University	23.57 ± 4.11	

IHLC: Internal health locus of control; CHLC: Chance health locus of control; PHLC: Powerful others health locus of control

Table 3: Linear regressions results of demographic variables predicting HLC among Tehran holy shrine pilgrims

Variable	IHLC			CHLC			PHLC		
	B (CI)	**S.E**	**P-Value**	**B (CI)**	**S.E**	**P-Value**	**B (CI)**	**S.E**	**P-Value**
Gender									
Male	1			1			1		
Female	-0.200 (-0.842,0.442)	0.327	0.540	0.103 (-0.865,1.071)	0.493	0.834	-0.219 (-0.980,0.542)	0.388	0.572
Nationality									
Iranian	1			1			1		
Afghan	-0.994 (-2.211,0.224)	0.620	0.109	0.171 (-1.665,2.006)	0.934	0.855	-0.907 (-2.350,0.537)	0.735	0.218
Living area									
Tehran	1			1			1		
Township	-0.406 (-1.192,0.379)	0.400	0.310	-0.379 (-1.562,0.805)	0.603	0.530	0.256 (-0.676,1.187)	0.474	0.590
Education level									
Elementary school	1			1			1		
High school	0.435 (-0.266,1.135)	0.357	0.224	0.140 (-0.916,1.196)	0.538	0.795	0.541 (-0.290,1.372)	0.423	0.202
University	0.781 (0.043,1.520)	0.376	0.038*	-1.893 (-3.006,-0.780)	0.567	0.001*	-0.202 (-1.077,0.674)	0.446	0.651
Family monthly income (in Rials)									
No income	1			1			1		
<10000000	-0.046 (-0.762,0.670)	0.365	0.899	1.300 (0.221,2.379)	0.549	0.018*	0.419 (-0.430,1.268)	0.432	0.333
≥10000000	-0.007 (-0.850,0.836)	0.429	0.987	1.701 (0.429,2.972)	0.647	0.009*	-0.334 (-1.334,0.666)	0.509	0.512
Location of shrine									
North	1			1			1		
South	0.002 (-0.533,0.537)	0.273	0.994	-0.009 (-0.817,0.798)	0.411	0.982	-0.003 (-0.638,0.632)	0.323	0.993
Marital status									
Single, widowed, divorced	1			1			1		
Married	0.226 (-0.411,0.863)	0.324	0.485	-0.566 (-1.527,0.394)	0.489	0.247	-0.925 (-1.680,-0.170)	0.385	0.016*
Age	-0.007 (-0.035,0.022)	0.014	0.647	0.006 (-0.037,0.049)	0.022	0.783	0.051 (0.017,0.084)	0.017	0.003*

CI: Confidence interval. * Significant at 0.05 level.

The Benferroni post hoc test results showed that the mean scores of pilgrims in CHLC with higher education levels from elementary school education to university education (P-value=0.002); and from high school education to university education (P-value≤0.001) reduced significantly.

Linear regression analysis results for each area of the MHLC scale are presented in Table 3. The results showed that the level of education had a significant relationship with internal health locus of control (IHLC) so that in people with higher educational levels, belief in personal health control was higher compared to others.

The level of education and income had a significant relationship with the people's belief in the effect of luck and fortune on their health (CHLC) so that in people with higher educational levels, the belief in the effect of chance on health locus of control was less, and by increase in income, their score increased.

Also marital status and age were significantly associated with PHLC. PHLC among the married people was less than in the widowed and divorced people, and by increase in age, PHLC increased too (Table 3).

Discussion

The mean scores of pilgrims in IHLC and PHLC had the highest value, and their score in CHLC was the lowest. According to these results, people consider their health more related to their own and others' actions and behaviors, and consider chance and luck to be less effective in their health status.

Religious beliefs may cause people to be less susceptible to life pressures and multiple adversities, and be safer against accidents and diseases. People who enjoy internal health locus of control believe that certain consequences and events are the results of their own behaviors, and they are the ones who determine their own health; however, people with external health locus of control (powerful others) believe that consequences and events are the results of other forces such as doctors, specialists, etc. [1]. It has been indicated in several studies performed on diabetic patients and pregnant women in Iran that people consider "themselves" as the most important factor in their health, and obtained the highest score in internal locus of control [12, 17, 18].

In this study, educated people believed more in the role of internal factors in determining their health as compared to those with lower educations. In Aghamolaie et al.'s study in Bandar Abbas, Iran, people with university education believed less in the effect of chance on their health than others. Also people with higher education believed less in the effect of powerful others on their health [1]. Kuwahara et al. in a study in rural Japan showed that

most people with low education believed that external factors such as chance and powerful others affect their health status [10].

The results of this study showed that by increasing age, people's belief in the power of others including doctors and specialists in their health increases. The results of a study conducted by Grotz et al. on adults in Germany indicated that by increase in age, the powerful others' health locus of control score increases [9]. Kuwahara et al. found that by increasing age, the scores of all health locus of control components increase [10]. Rafique et al. showed that self-care behaviors increase by age [19]. Aghamolaie et al. from Iran reported that belief in internal and powerful others' locus of control increases by age [1].

Based on the results of this study, the marital status of people had a significant relationship with their belief in PHLC (doctors and specialists) in determining their health status. Probably married people, due to their sense of responsibility and commitment to taking care of their partner, believe more in PHLC. These results are consistent with the findings of Aghamolaei et al. [1].

The results showed that by increase in income, the participants' belief in the effect of chance and luck in determining their health increases. Basically, people with high incomes may have access to better facilities, and believe that most events in their lives and their health-related events are due to chance rather than their behavior. But this result is in contrast with that of Grotz et al., who conducted a study on the adult population of Germany, and found that people with lower socio-economic status believed more in the effect of chance and powerful others on their health [9]. One reason for this lack of consistency can be attributed to differences in beliefs and cultural values among different societies.

In this study, none of the components of the health locus of control was significantly different between men and women. However, in Kuwahara et al.'s study in Japan, the scores of CHLC and PHLC among women were higher than in men [10].

One of the limitations of this study was that the data were collected through self-reporting and so it might suffer from lack of accuracy. Another limitation of this study was that the participants were enrolled by convenient sampling; therefore, these results may not generalize to all Iranian populations.

Conclusion

According to the research results, most people think that they control their health or life events themselves. People with a higher internal locus of control score have more tendency to practice health promotion and disease prevention and seek health through visiting holy sites and appealing to God.

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