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Comparison of the Effectiveness of Mindfulness and Spiritual/Religious Coping Skills on Health Hardiness and Somatic Complaints of Elderly with Hypertension

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Abstract

Background and Objectives: Hypertension, especially in the elderly, is one of the important risk factors for cardiovascular diseases. Due to the impact of psychological factors on this disease,l and the need for non-pharmacological treatments, this research was conducted to compare the effectiveness of mindfulness and spiritual/religious coping skills on health hardiness and somatic complaints of elderly with hypertension.

Methods: This semi-experimental study was conducted with a pre-test and post-test design. The study population consisted of all elderly with hypertension in the Center for the Elderly in Behshahr in 2015. A total of 45 people were selected by convenience sampling and randomly assigned to three groups. The experimental groups were trained in 8 sessions of 70 minutes by mindfulness and spiritual/religious coping skills methods. Data were collected with questionnaires of health hardiness and somatic complaints and analyzed by multivariate analysis of covariance method.

Results: The findings showed mindfulness and spiritual/religious coping skills methods led to significant increase in health hardiness and signoficant decrease i in somatic complaints of elderly with hypertension (P<0.001). Also, there was not any significant difference between the mindfulness and spiritual/religious coping skills methods in increase in health hardiness and decrease in somatic complaints of elderly with hypertension (P<0.05).

Conclusion: The results showed that both treatments, especially spiritual/religious coping skills method, were effective on increase in health hardiness and decrease in somatic complaints of elderly with hypertension. Therefore, counselors and therapists can use these methods to increase health hardiness and decrease somatic complaints of elderly with hypertension.

Keywords: Blood Pressure, Coping Skills, Hardiness, Mindfulness, Somatic Complaints.

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Introduction

Blood pressure is one of the important physiological factors in cardiac system (1), and hypertension is one of the factors for developing stroke and cardiac diseases in the elderly. The likelihood of developing hypertension increases with increasing age (2). Decreased hardiness is one of the consequences of hypertension in the elderly (3). Hardiness was first addressed by Kobasa and serves as a source of resistance to cope with stressful events of life (4). Hardiness is effective to maintain health and enhance functioning in stressful conditions and quality of life (5). According to Kobasa's concept of hardiness, Pollack addressed health hardiness. People who have health hardiness use effective coping skills to cope with disease, use their maximum resources, tend to assess and reassess health stressors as useful factors to grow and learn, rather than threatening and detrimental effects, and also assess events optimistically (6).

Besides that, hypertension is closely associated with lifestyle, mental health, and quality of life (7). Somatic complaints represent one of the aspects of mental health and refer to those complaints that appear in the body yet generally have a psychological origin (8). Only 25% of the patients' complaints leads to physical diagnosis, and most of the somatic symptoms cannot be usually explained by physical examinations, including headache,

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gastrointestinal symptoms, and musculoskeletal pains (9).

Many psychological factors are effective on hypertension, and it is therefore necessary to use non-pharmacological approaches to improve the conditions of people with hypertension (10). Mindfulness is one of such approaches (11). Mindfulness refers to seeing thoughts as thoughts and events in the field of consciousness and emotional care without trying to change, and viewing them with calm and patience (12). Mindful people understand internal and external realities in an unsophisticated manner, and can face a wide spectrum of pleasant and unpleasant thoughts, experiences, and emotions (13). Mindfulness causes decrease in the adverse outcomes due to stressful conditions through facilitating positive assessment and the dehabituation process of using inappropriate coping skills (14).

Studies indicated that mindfulness is effective on health hardiness and somatic complaints (15-18). For example, Vinothkumar et al. reported that mindfulness was significantly effective on hardiness and perceived stress (17). In addition, Narimani et al. reported that mindfulness education and emotional regulation caused improvement of somatic symptoms and mental health (16). Besides that, spiritual/religious coping skills are effective methods to improve conditions (19). Coping skills refers to a set of cognitive and behavioral efforts to translate, interpret, and modify a stressful situation that play important roles in physical and mental health (20). These skills are one of the healthiest and most effective coping skills through which religious sources, religion, and spirituality are considered valuable sources of coping (21).

In this method, spiritual and religious beliefs and practices are used to face the stresses of life, including spiritual mindfulness, spiritual problem solving, forgiveness, prayer, trust, and appealing to God (19). The evidence indicates the effectiveness of spiritual/religious coping skills on health hardiness and somatic complaints (19,22-25). For example, Sadeghi Movahed et al. reported that educating coping skills was effective to reduce the symptoms of mental disorders especially somatic complaints and anxiety symptoms, but was not effective on depression reduction and social functioning (23). In addition, Yoon et al. study showed that coping strategies were significantly effective on increasing resilience (24).

Although age is an effective factor on hypertension, hypertension is a multifactorial disease in which genetic and environmental factors play role (26). Moreover, many psychological factors are effective on hypertension, and it is therefore necessary to use non-pharmacological approaches to improve the conditions of people with hypertension (10). Taken together, with regards to the significance of non-pharmacological treatments, the high likelihood of hypertension development in the elderly, and few conducted studies, our aim was to compare the effectiveness of mindfulness and spiritual/religious coping skills on health hardiness and somatic complaints in older people with hypertension.

Methods

The study population of this semi-experimental, controlled study with pretest-post-test consisted of all elderly people with hypertension in Center for the Elderly in Behshahr, northern Iran in 2015. Forty five people were selected by convenience sampling and randomly assigned to three groups (mindfulness, spiritual/religious coping skills, and control). To determine sample size, Fleiss sample size formula was used (27). Sample size was determined to be 8.87, with sigma=1.38, power=90/0, d2=4.507, and α=0.95 According to Behzadi et al. study (28). With regards to potential dropouts due to specific problems with which older people with hypertension are faced, 15 people were assigned to each group. Inclusion criteria were having 60-80 years, systolic blood pressure over 130, lack of taking psychiatric medications, and lack of simultaneously receiving other therapies, and exclusion criteria were not attending more than one session, incidence of stressful events such as divorce and death for relatives in the past six months,

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lack of cooperating, and filling out questionnaire incompletely.

To implement the study, first, necessary approval was provided by the university, the research purpose was explained for the director of the Center for the Elderly and then he provided consent to conduct the study in this center. After sampling, with observance of ethical considerations, endurance of confidentiality and keeping personal information private, and receiving informed consent form to participate in the study, the intervention groups attended eight 70-minute sessions of mindfulness and spiritual/religious coping skills, and the control group waited for training. It is noteworthy that all three groups were examined for health hardiness and somatic complaints at pretest and post-test. The interventions were as follows:

In the mindfulness group, Kabat-Zinn protocol was used. Accordingly, the first session was decided to address establishing communication and defining, conceptualizing, and the necessity of using mindfulness. In the second session, body relaxation was introduced to the participants, and relaxation for the muscles of the muscles of the forearm, arm, muscle behind the shin, thighs, abdomen, chest, neck, lips, eyes, jaws, and forehead was taught. The third session was specified to teaching relaxation for the muscles of the hands and arms, legs and thighs, abdomen and chest, neck and shoulders, jaws, foreheads, and lips. In the fourth session, mindful breathing, inhalation and exhalation technique with peace and without thinking, and watching breathing were taught. In the fifth session, the technique of paying attention to the body movements while breathing, concentration on the body limbs and their movements, and seeking out physical senses were taught.

In the sixth session, paying attention to the mind, negative and positive thoughts and the unpleasantness of the thoughts, permitting negative and positive thoughts to enter the mind and setting them aside without judgment, and paying in-depth attention to them were taught. In the seventh session, the fourth, fifth, and sixth sessions were duplicated. In the eighth session, all the previous sessions were reviewed and round up.

In the spiritual/religious coping skills group, Nouri and Bolhari protocol was used; accordingly, the first session was decided to address establishing communication and defining, conceptualizing, and the necessity of using spiritual/religious coping skills. In the second session, self-awareness and the significance of physical, mental, social, and spiritual self-awareness were taught. It is noteworthy that the trainer assigned home assignments to the participants and gave them feedback at the beginning of the next session (14).

In the third session, relationship between self-awareness and health, the significance of spirituality in self-awareness, and relationship between self-awareness and spirituality were taught. In the fourth session, the process of problem solving and coping, and the significance of problem solving and coping using spiritual approach were taught. In the fifth session, the types of problem solving and coping according to the spiritual approach, and the steps of problem solving and coping according to spiritual approach were taught. In the sixth session, forgiveness, their steps, and their role in interpersonal relationships were taught. In the seventh session, the types of remembrance, the methods of its expression, the significance of the location and time of remembrance, and the effects and barriers to remembrance were taught. It is noteworthy that the trainer assigned home assignments to the participants and gave them feedback at the beginning of the next session (19).

To measure health hardiness, the Revised Health Hardiness Inventory, developed by Gebhardet et al., was used. This inventory consists of 24 items rated by 5-point Likert scale (1=Absolutely disagree to 5=Absolutely agree), and therefore the minimum and maximum possible scores are 24 and 100, respectively, with higher scores representing higher levels of health hardiness. Gebhardet et al. confirmed the validity of this instrument by means of the instruments of internal and external health locus of control, and reported its reliability 0.79 for general population and

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0.78 for students (29). Besides that, Ghazi confirmed the face and content validity of this instrument according to the experts' viewpoints, and reported its reliability 0.83 by Cronbach's alpha coefficient (30). In the current study, the reliability of this instrument was derived 0.74 by Cronbach's alpha coefficient.

To measure somatic complaints, the Somatic Complaints Subscale of the Revised Symptom Checklist, developed by Deragotis et al., was used. This instrument consists of 12 items rated by 5-point Likert scale (0=None to 4=Severe), and therefore the minimum and maximum possible scores are 0 and 48, respectively, with higher score representing more somatic complaints.

Deragotis et al. confirmed the concurrent validity of somatic complaints with reference to the aspects of Minnesota Multidimensional Questionnaire, and its reliability was reported 0.88 according to Cronbach's alpha coefficient (31). In addition, Anisi et al. confirmed the concurrent validity of somatic complaints with reference to all aspects of Minnesota Multidimensional Questionnaire, and reported its reliability 0.90 according to Cronbach's alpha coefficient (32). In the current study, the reliability of this scale was derived 0.86 using Cronbach's alpha coefficient.

To calculate the data, central tendency indices were used. The distribution of the variables was used for descriptive statistics, and multivariate analysis of covariance, in which the values of the variables in pretest were considered covariate, was used to test statistical assumptions. Data analysis was conducted by SPSS 19, and $p<0.05$ was considered the level of significance.

Result

The participants of this study were 45 older people with hypertension in Behshahr who were assigned to three groups of 15 each, spiritual/religious coping skills, mindfulness, and control. In the mindfulness group, there were none (60%) women and six (40%) men; in the spiritual/religious coping skills group, there were eight (53.33%) women and seven (46.67%) men; and in the control group, there were none (60%) women and six (40%) men. Before data analysis, the presuppositions were examined by multivariate analysis of covariance. The results of Kolmogorov-smirnov test was significant for none of the variables in the pretest and post-test, which showed that normal distribution of the data was established.

The results of Box's M test and Levene's test were not significant, which showed that the assumption of the equality of covariance matrices and the assumption of the equality of variances were not established. Table 1 shows mean (standard deviation) scores on health hardiness and somatic complaints in the pretest and post-test.

Table 1. Mean (standard deviation) scores on health hardiness and somatic complaints in different groups at pretest and post-test

Groups	Health Hardiness		Somatic Complaints	
	Pretest	Post-Test	Pretest	Post-Test
	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Mindfulness	59.5±8.24	75.3±11.4	30.9±7.53	22.5±4.30
Spiritual Coping Skills	56.14±10.3	79.61±11.3	29.4±8.11	19.94±3.7
Control	63.3±9.51	61.5±9.7	33.6±7.36	31.4±7.28

In the post-test, mean health hardiness in the spiritual/religious coping skills group (m=79.61, SD=11.28), was higher than those in the other groups and mean somatic complaints in this group (m=19.94, SD=3.67), was lower than those in the other groups (Table 1).

Table 2. The results of multivariate analysis of covariance for health hardiness and somatic complaints in mindfulness group and control group

Dependent variable		Sum of squares	d.f	F	P
Health hardiness	Pretest	654.248	1	35.089	00.01
	Group	711.624	1	38.167	00.01
	Error	503.415	27		
	Total	3942.317	30		
Somatic complaints	Pretest	327.168	1	29.720	00.01
	Group	384.772	1	34.953	00.01
	Error	297.216	27		
	Total	2538.556	30		

The results of multivariate tests demonstrated significant difference in at least one of the two variables in question between the groups of the elderly. Regarding eta squared of Wilks' Lambda test (0.483), the independent variable explains 48.3% of total variance (F=25.568,

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p≤0.001). Because multivariate tests were significant, multivariate analysis of covariance with adjusting for the pretest effect was used to investigate the efficacy of teaching mindfulness on health hardiness and somatic complaints in elderly with hypertension (Table 2).

The results demonstrated that group had a significant effect on post-test scores. Regarding eta squared, 69.7% of variance in health hardiness and 57.3% of variance in somatic complaints could be explained by the effect of teaching mindfulness. Therefore, this method caused a significant increase in health hardiness (F=38.167, p≤0.001) and a significant decrease in somatic complaints (F=34.953, p≤0.001) in elderly with hypertension (Table 2).

Table 3. The results of multivariate analysis of covariance for health hardiness and somatic complaints in control group and spiritual/religious coping skills group

Dependent variable		Sum of squares	d.f	F	P
Health hardiness	Pretest	751.324	1	37.641	0.001
	Group	776.960	1	40.836	0.001
	Error	513.729	27		
	Total	4311.259	30		
Somatic complaints	Pretest	358.261	1	31.589	0.001
	Group	417.169	1	36.784	0.001
	Error	306.207	27		
	Total	2751.662	30		

To investigate the efficacy of spiritual/religious coping skills teaching on health hardiness and somatic complaints in the elderly, multivariate analysis of covariance with adjusting for the pretest effect was used (Table 3).

The results demonstrated that group had a significant effect on post-test scores. Regarding eta squared, 75.9% of variance in health hardiness and 67.3% of variance in somatic complaints could be explained by the effect of teaching spiritual/religious coping skills. Therefore, this method caused a significant increase in health hardiness (F=40.836, p≤0.001) and a significant decrease in somatic complaints (F=36.784, p≤0.001) in elderly with hypertension (Table 3).

To investigate difference in health hardiness and somatic complaints between mindfulness teaching and spiritual/religious coping skills teaching, multivariate analysis of covariance with adjusting for the pretest effect was used (Table 4).

Table 4. The results of multivariate analysis of covariance for health hardiness and somatic complaints in mindfulness group and spiritual/religious coping skills group

Dependent variable		Sum of squares	d.f	F	P
Health hardiness	Pretest	692.138	1	6.707	0.043
	Group	364.677	1	3.534	0.067
	Error	2785.887	27		
	Total	4853.231	30		
Somatic complaints	Pretest	462.358	1	6.354	0.045
	Group	248.815	1	3.419	0.066
	Error	1964.385	27		
	Total	874.256	30		

The results demonstrated that group had no significant effect on post-test scores. Therefore, mindfulness and spiritual/religious coping skills were not significantly different in health hardiness (F=3.534, p=0.067) and somatic complaints (F=3.419, p=0.073) in elderly with hypertension (Table 4).

Discussion

Given that a high number of older people suffer from hypertension, and that hypertension is a threatening risk of general health and developing stroke and cardiac diseases in this age population, this study was conducted to compare the effects of mindfulness and spiritual/religious coping skills on health hardiness and somatic complaints in elderly with hypertension. Taken together, this study demonstrated that both mindfulness and spiritual/religious coping skills caused increase in health hardiness and decrease in somatic complaints in older people with hypertension without any significant difference in health hardiness and somatic complaints between the two methods.

The findings indicated that teaching mindfulness caused increase in health hardiness and decrease in somatic complaints. Our findings are consistent with some studies on increase in health hardiness (15,17) and with some others on decrease in somatic complaints (16,18). For example, Vinothkumar et al. reported that mindfulness had a significant effect on hardiness and perceived stresses (17). Narimani et al. study showed that

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mindfulness teaching and emotional regulation caused improvement of somatic complaints and mental health in chemical veterans (16).

To explain this finding, we can argue that our minds tend to interpret and infer the events, which gradually causes stable reactions and emotions. In people who have problems such as elderly with hypertension, mind has tendency toward negative and saddening thoughts, which in turn causes their continuity, but mindfulness causes specific encoding (rather than overall generalization) of information in the mind through encouraging people to exercise paying attention to the specifications of experiences without judgment, which is associated with specific retrieval from the memory. This method helps to modulate emotions without judgment and clearly see and accept emotions and physical phenomena as they occur.

According to Kabat-Zinn theory (14), in mindfulness method, body relaxation, breathing technique, attitude, and certain skills to cope with stress and complaints are taught, which reinforces both physical and mental functioning. Accordingly, people are expected to adopt more positive attitudes towards their abilities and act successfully in coping with stresses. As a result, mindful people consider their problems without judgment, accept their difficulties and emotions, learn to deal with the problems, use body relaxation and breathing technique to cope with stresses, and develop a positive attitude toward their abilities, which causes the effectiveness of mindfulness teaching in increasing hardiness and decreasing somatic complaints in elderly with hypertension.

Besides that, our study showed that teaching religious/spiritual coping skills caused increase in health hardiness and decrease in somatic complaints. This is consistent with some studies on increase in health hardiness (22,24) and with some others on decrease in somatic complaints (23,25). For example, Askarian et al. argued that teaching religious coping skills caused improvement of resilience, adjustment, and management of stress (22). McCormick et al. study indicated that coping skills caused relief of pain and decrease in somatic complaints (25).

To explain this finding, based on Hajizad et al. study (20), we can argue that spiritual/religious coping skills prevent the incidence of disease-related adverse complications (particularly in elderly with hypertension), increase self-care and self-confidence, and exert positive effects on individual's physical, mental, and social status. Such factors initially cause increase in function, improvement of quality of life, a sense of social identity, link to the community, coping with illness, and ultimately increase in resistance to diseases, positive assessment (increase in health hardiness), and decrease in somatic complaints. According to Nouri and Bolhari argument, another explanation is that teaching spiritual/religious coping skills alongside physical, mental, and social self-awareness, teaching forgiveness and a series of spiritual strategies such as remembrance cause relief of disease- and other stressful events-associated stress (19).

Therefore, on the one hand, this teaching method causes older people with hypertension not only to accept their conditions, but also to use the best strategies to cope with the disease conditions and their physical disabilities as a result of educating self-awareness, problem solving, and coping, which helps them acquire resistance to diseases and consider them an opportunity to grow and experience rather than health-threatening, i.e. health hardiness-improving. On the other hand, through such education, elderly with hypertension accept their conditions, become involved in remembrance and prayer, and explain their problems through spiritual issues that cause decrease in their somatic complaints.

Other findings indicated that health hardiness and somatic complaints were not significantly different between the mindfulness group and the spiritual/religious coping skills group. This finding can be explained by the fact that solid theoretical bases, numerous advantages, and underlying mechanisms separately cause these two methods not to be significantly different, and to increase health hardiness and decrease

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somatic complaints in older people with hypertension similarly.

The most important limitation of the present study was the use of convenient sampling. Besides that, lack of using follow-up to investigate the continuity of the effect of training methods was another limitation of this study. The last limitation was that all the samples were older people with hypertension in Behshahr. It is therefore recommended to use sampling methods with lower levels of error such as random sampling in future studies. Other recommendation is the use of short-term and long-term follow-ups to investigate the continuity of the teaching methods. Besides that, given cultural differences, it is recommended to duplicate this study on the elderly of other cities, which may lead to inconsistent findings. The last recommendation is to compare these two methods with other methods including meta-cognitive therapy, schema therapy, dialectical behavior therapy, behavioral activation, which may have useful results.

Conclusion

The current study demonstrated that the methods of training mindfulness and spiritual/religious coping skills caused increase in health hardiness and decrease in somatic complaints in elderly with hypertension; therefore, these methods can be used to increase health hardiness and decrease somatic complaints. They can be implemented in healthcare centers as well. Therefore, counselors and therapists can use the methods of mindfulness and spiritual/religious coping skills to increase health hardiness and decrease somatic complaints in older people. Through helping the elderly to increase the use of such methods, we can hope that they are enabled to increase health hardiness and decrease somatic complaints, and therefore live a better life.

Conflict of interest

The authors declare no conflict of interest.

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