SELF-EFFICACY ANALYSIS OF HEALTH PROMOTING BEHAVIORS OF HYPERTENSIVE PATIENTS IN RAFSANJAN

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ABSTRACT

Objective: To analyze self-efficacy of the patients suffering from hypertension in Rafsanjan (South of Iran).

Methodology: The current correlational study was conducted in Rafsanjan University of Medical Sciences, Rafsanjan, Iran, using a simple random sampling. Hypertensive patients of health centers in Rafsanjan were selected. The data collection tool was a questionnaire consisting of two parts: a demographic and a self-efficacy part. Data analysis was done in using Chi-square tests, independent t-tests, Pearson correlations and one-way ANOVAs utilizing version 18 of the SPSS.

Results: Total of 385 patients were included. The mean age of the patients was 61.39±10.98 years, 96 of whom being males (24.9%). More than 76% of the patients had a BMI of more than 25. Mean score and standard deviation for self-efficacy of the patients were 64.3 ±15.1. The highest self-efficacy scores were associated with regular drug use, and the lowest scores were related to regular physical activities and stress control and management. There was a significant correlation between the mean score for self-efficacy and the variables of age, duration of the disease, systolic and diastolic pressure. Yet, no significant correlation was obtained with other independent and background variables (p>0.05).

Conclusion: The perceived self efficacy of participants was higher than average, the high score was related to regular medicine intake and regular referral to physician. The lowest score was related to regular physical activity behavior and stress control and management. Self Efficacy had a significant relationship with variables such as age duration of disease, systolic and diastolic pressure.

Key Words: Self-efficacy, Health promotion, Behavior, Hypertension.
INTRODUCTION

Cardiovascular disorders are illnesses that affect the cardiovascular system and blood circulation. They are among the main causes of mortality in men and women of different ethnic backgrounds. Hypertension is a common and recurrent chronic disease characterized by a systolic blood pressure of 140 mm Hg and a diastolic blood pressure higher than 90 mm Hg. According to the World Health Organization, one out of every five adults in the world suffers from high blood pressure. According to research conducted in different regions of Iran, the prevalence of hypertension in some regions are as follows: Isfahan (11%), Chaharmahal Bakhhtiari (17%), Zanjan (17.5%) and Arak (18.9%). Due to a lack of obvious and recognizable symptoms and unpleasant side effects, this illness is called the silent killer. Hypertension doubles the risk of cardiovascular diseases, including coronary artery disease, congestive heart failure, ischemic and hemorrhagic strokes, kidney failure and peripheral arterial disease, and causes heart enlargement and visual and cognitive impairment. Various studies indicate that the life quality of people with hypertension is lower than healthy people, and that hypertension is a risk factor for developing depression. Hypertension is the cause of death in 49% of cases of cardiovascular diseases. The predominant risk factors that predict this disease include inheritance, genetics, inappropriate nutrition, alcohol and tobacco consumption, low self-esteem, low levels of education, insomnia, psychological factors, and social factors such as urbanization, followed by inertia. Tensions, family issues and environmental stress are also risk factors for this disease. Despite all the above-mentioned factors, this chronic disease can be prevented and treated. Controlling most of these factors depend on individual behavior, and the patient plays a key role in adopting health promotion behaviors to prevent secondary complications. In the process of treating the illness, the patient's participation in treatment is of great importance, but the patient's role in controlling the process of behavior change is mostly neglected. Self-efficacy is the confidence that the person feels about doing a particular activity. Therefore, promoting self-efficacy is an important means for active participation in treatment and behavior change, which leads to improved self-care in patients. Given the importance of the subject and the specific role of behavioral factors in the development of the disease and the resulting consequences and the lack of similar studies in this area.

The present study was conducted to analyze the self-efficacy of health promotion behaviors in hypertensive patients, so that the authorities and planners can use the results to make the right decisions, policies, and plans, and design interventions based on credible scientific evidence and information. Also, people may study the results of the study to adopt voluntary healthy behaviors to improve their quality of life.

METHODOLOGY

The statistical population of the present analytical-correlational study consists of all the patients with hypertension who have health records in health centers in Rafsanjan. The sample size was calculated according to the statistical advisor's opinion and considering a significance level of 95%. The random sampling method was a multi-stage method. This research was concluded from the research plan no. 96154 of Vice- Chancellor for Research and Technology at Rafsanjan University of Medical Sciences (Ethical code: IR.RUMS.REC.1396.171).

At first, four centers were randomly selected and then, according to the proportion of sample size and the number of patients covered by each center, the participants were selected and invited to enter the study. Inclusion criteria were having a follow-up record for treatment in health centers, being a resident of Rafsanjan, and having been ill for at least six months. Those who had incompletely filled out the questionnaires and those who had no intention of participating in the study were excluded from the study. The data were collected through self-reporting questionnaires filled out by the participants and interviews with a public health expert. The data gathering tool of this study was a two-part questionnaire, taken from the study by MirzaeiAlavijeh et al. The first part contains demographic information and background questions with twelve questions about age, sex, occupation, level of education, marital status, family income status, body mass index, the patient's blood pressure, suffering from other diseases such as diabetes, and the patient's assessment of family support after diagnosis. The second part of the questionnaire was related to understanding self-efficacy activities recommended by physicians and health experts to reduce hypertension with ten items, including reducing or stopping salt intake, physical activities, exercise and walking, increased consumption of fruit and vegetables, regular consumption of drugs, reduced sugar intake, regular visits to the doctor, reduced consumption of red meat, reduced consumption of fat, anger control and management, stress reduction and self-esteem. Responses to the items were calibrated in a Likert scale with the five scales never, seldom, sometimes, often and always; every item was scored 0, 25, 50, 75, and 100, respectively. The data were analyzed using Chi-square tests, Pearson correlation tests, independent t-tests and one-way ANOVAs in version 18 of the SPSS software, with the significance level set at 0.05.
diastolic blood pressures (p < 0.05) (Table 2). The self-efficacy score of patients who described their familial-social support as high was 70%, and those who reported poor support had a self-efficacy score of 59%. The results of a one-way analysis of variance showed significant differences (p < 0.001), meaning that social support had an effect on patient's self-efficacy. In this study, no significant relationship was obtained between mean self-efficacy scores and other independent and background variables such as BMI, gender, education, occupation and suffering from other diseases (p > 0.05).

### Table 1: Distribution of the Frequency of the Answers and the Educational Priorities of Patients with Hypertension in Rafsanjan to Self-Efficacy Questions

<table>
<thead>
<tr>
<th>Self-efficacy</th>
<th>Answering scale n (%)</th>
<th>Mean ± SD</th>
<th>Educational priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular physical activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>62 (16.2)</td>
<td>98 (25.6)</td>
<td>94 (24.5)</td>
</tr>
<tr>
<td>Seldom</td>
<td>19 (4.9)</td>
<td>80 (20.8)</td>
<td>118 (30.6)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>14 (3.6)</td>
<td>77 (20.1)</td>
<td>122 (31.8)</td>
</tr>
<tr>
<td>Often</td>
<td>3 (0.8)</td>
<td>43 (11.3)</td>
<td>136 (36.1)</td>
</tr>
<tr>
<td>Always</td>
<td>21 (5.5)</td>
<td>42 (10.9)</td>
<td>97 (25.3)</td>
</tr>
<tr>
<td>Control and management of stress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red meat consumption reduction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control and management of anger</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing the consumption of fruit and vegetable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar consumption reduction</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Fat consumption reduction</td>
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<tr>
<td>Salt consumption reduction</td>
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<tr>
<td>Regular meetings with the physician</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Regular medicine intake</td>
<td></td>
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</tbody>
</table>

### Table 2: The Correlation between Mean Self-Efficacy Score of the Patients with Other Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ± SD</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy (X1)</td>
<td>64.3±16.01</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (X2)</td>
<td>61.39±10.98</td>
<td>0.12*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systole (X3)</td>
<td>125.93±14.83</td>
<td>-0.15**</td>
<td>0.07</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diastole (X4)</td>
<td>78.37±10.61</td>
<td>-0.19**</td>
<td>-0.08</td>
<td>0.6**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of the disease (X5)</td>
<td>6.87±5.75</td>
<td>0.1*</td>
<td>0.3**</td>
<td>-0.01</td>
<td>-0.05</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Body mass index (X6)</td>
<td>28.3±28.3</td>
<td>-0.05</td>
<td>0.3**</td>
<td>0.1*</td>
<td>0.1**</td>
<td>-0.08</td>
<td>1</td>
</tr>
</tbody>
</table>

*Significant at the level of 0.05
** Significant at the level of 0.01
The high prevalence of hypertension worldwide and the serious complications that the disease brings about for the organs of the body have caused this disease to be a serious health problem in all societies. Activities such as daily blood pressure check-up, visiting health centers regularly, changing one's lifestyle, such as quitting smoking, avoiding over-consumption of alcohol, using a healthy diet through increased chicken and fish consumption, reducing red meat consumption, taking five servings of fruit and vegetables daily, reducing salt intake to less than five grams per day, minimizing saturated and unsaturated fats, having regular and daily physical activities, and doing aerobic exercises, reducing and managing stress and maintaining self-esteem, controlling and managing anger, observing the recommendations of the physician and taking prescribed medications by the physician are behavioral determinants in controlling and preventing hypertension.\(^1\)\(^2\)\(^3\)\(^4\)\(^5\)\(^6\)

The behavioral determinants of the disease have a major role in the development of the disease and the associated consequences. The patient plays an important role in the implementation and conduction of the above-mentioned behaviors. So, adopting healthy behaviors (self-efficacy) is very effective in controlling the disease. Self-efficacy means the individual's confidence in their ability to perform self-care activities in a regular manner, in a way that desirable results are achieved.\(^7\) Therefore, self-efficacy is an important means for active participation in the treatment and designing of evidence-based interventions designed to change behavior in order to promote self-care in patients, control hypertension and avoid secondary outcomes. In the present study, the average score of the patients' self-efficacy was 64%. This means that 64% of the participants believed that they had managed to perform activities for controlling the disease. In a study conducted by Hazavehie et al. on 289 hypertensive patients aged over 30 years in the villages of Hamadan, it was found that self-efficacy of the patients was 76%.\(^8\) Also, the self-efficacy score of hypertensive patients in the MA study was about 72%.\(^9\) And in the study by Kamran et al. which was performed on 671 hypertension patients in Ardabil, the score was about 80%.\(^10\) Therefore, based on the self-efficacy scores of patients who are slightly above average, it is recommended that appropriate interventions be planned, implemented and evaluated using behavior change theories. It is also possible to enhance social health of the patients through developing individual skills.

In this study, the highest self-efficacy score for health promotion behaviors was related to the regular consumption of medicine, which is similar to the results of the study by Mirzaei Alavieh et al. and Saad et al.\(^11\)\(^12\) This may be due to the effect of physicians' advice for patients, patients' awareness of the need for regular and timely taking of medicine and the observation of the immediate effects of drugs. Also, the lowest self-efficacy score was associated with stress management behaviors and regular physical activities.

Stress and psycho social tensions are the risk factors independent of age and gender. Other factors are the classical physical factors of heart disease that increase cardiovascular reactions and help the onset or continuation of cardiovascular diseases through the mechanisms of psychiatric, neurological, physiological and the stimulation of the autonomic nervous system, especially the sympathetic section.\(^13\)

In the present study, almost half of the patients were confident that they could manage their stress and anxiety. Therefore, in order to empower the patients, stress management trainings, regular and periodic referral of patients for psychological counseling by the experts in health centers, using relaxation techniques, listening to music, yoga, deep breathing and a cognitive-behavioral intervention that is a combination of contraceptive techniques and cognitive-behavioral techniques are recommended to reduce the stress experienced by individuals and to increase their ability.\(^14\)\(^15\)

Also, regular physical activity was a behavior about which patients reported a poor self-efficacy. The World Health Organization has identified physical activity as one of the four main factors for controlling cardiovascular diseases.\(^16\) In this research, the patient's confidence in performing physical activities was undesirable; whereas in Mularcik's research on the self-efficacy of hypertensive patients, the self-efficacy associated with physical activity was about 75%, which is desirable.\(^17\) Designing and implementing a training program based on behavioral change theories such as the trans-regional Model, creating safe health protection environments with enough space for physical activities in all neighborhoods, using appropriate educational materials and tools such as posters and pamphlets with scientific contents based on the requirements and simple physical activities throughout the day without the need for expensive equipment or even without the need to go out of one's house, especially for the elderly, are all recommended to increase physical activities.\(^21\)\(^22\) In this study, behaviors such as regular use of medication and reduced consumption of fat were more common among women, while physical activities and exercise were higher among men. And there was a significant difference between the two sexes in this regard. Therefore, it is necessary to pay attention to the gender of the participants in the formulation and implementation of educational programs. Another important background variable was age. There was a significant correlation between age and self-efficacy, in terms of reduced salt and red meat intake. Motlagh et al., in their research concerning the women referring to health centers in Yazd, found that as women get older, the amount of their sodium intake decreases, which is consistent with the results of the present study.\(^26\) There was no significant relationship between the mean score for self-efficacy behaviors of hypertensive patients and the level of education and economic situation. These findings are not in line with the results of the study by Barati et al. and Mazloomi et al.\(^25\)\(^27\) This inconsistency may be due to the fact that most of the participants reported their salary to be average, and most of them had elementary education.

In addition to individual behaviors, social support (especially the family) is an important external factor that plays an effective role in promoting self-efficacy. Social support is considered to be the availability of people who are there for the individual and show affection and support in stressful conditions, incidents and diseases.\(^28\) The results of this study showed that patients who enjoy higher levels of family support had higher levels of confidence in adopting health promotion behaviors. Lee et al. and Gąsiorowski et al. showed that patients who received more support from their families were able to control their disease in a...
more effective way[23,32]. Also, Gienia et al. introduced family
support as a decisive factor in following the diet therapy[32].
Therefore, given the role and importance of the family in
protecting patients, it is suggested that health care providers
involve families in the treatment of individuals and encourage
them to play a more active role. Also, in case of individuals who
live alone, it is advised that the treatment team provide more
support for them as one of the sources of social support. In the
present study, 77.6% of the participants had a BMI of more than
25. This was compared with the results of Webster et al. and Xu et
al., which indicated that body mass index was a major contributor
to hypertension[29,30]. There was a direct correlation between
systolic blood pressure and the age of the participants; these
results were in line with the results of the study conducted by
Kalanee et al.[31] There is also a direct correlation between systolic
blood pressure and body mass index, which is in contradiction with
the results of the study by Fattahi et al.[32]. They reported that
there is an inverse relation between systolic blood pressure and
body mass index. Accordingly, it is essential to adopt weight loss
policies.

CONCLUSION
The perceived self-efficacy of the participants in this study was
higher than average in relation to health promotion behaviors
against hypertension. Regarding the sub scales of self-efficacy,
the highest score was related to regular medicine intake and
regular referral to the physician. The lowest score was related to
regular physical activity behaviors and stress control and
management. Self-efficacy had a significant relationship with
variables such as age, duration of disease, and systolic and
diastolic blood pressures. Due to the uncertainty of patients
regarding regular physical activities and stress management,
designing, implementing and evaluating the theory-based
interventions are suggested in order to promote patients’ self-
efficacy. Also, stakeholders need to pay more attention to the
gender of the audience. They also need to address the
requirements of each group.

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