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Assessment of Knowledge, Attitude and Adherence to Treatment in Patients With Heart Disease in Iran

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Abstract

Introduction: Adherence to treatment is essential in heart disease. This study was conducted to evaluate the nutritional awareness of hypertensive patients and their dietary intake in heart disease.
Methods: This is a descriptive-analytical study that was performed on hypertensive patients referred to Farshchian Cardiovascular Clinic in Iran, using the available random sampling method. Data collection tools included demographic information questionnaire and three questionnaires of nutritional awareness, illness perception, and dietary follow-up of patients with hypertension. Data were analyzed using SPSS software version 16 and descriptive statistics.
Results: The mean score of knowledge was 4.73±1.55. Fifty-eight percent of patients were unaware of high-fat diet, 56% of them did not eat red meat and 63% of them did not eat sweets. The mean score of perception was 29.58 ± 3.94 of which 38% of the patients were uncontrollable and 43% strongly opposed their illnesses which could lead to premature death and 56% were against dietary restriction.
Conclusion: There is a need for interventions to improve the knowledge and attitude of patients with heart disease.
Keywords: Knowledge, Attitude, Heart Disease, Adherence Treatment

Introduction

Coronary artery disease is the main cause of death and disability in industrialized countries and also the cause for 30% of all deaths. Hypertension is one of the common, chronic, recurrent diseases that sets the context for many diseases. Hypertension accounts for 5% of the world's disease burden, which affects more than a quarter of the world's adult population. It is projected that by 2025 the disease rate increases by 24% in developed countries and 80% in developing countries.[1]

This disease is very critical given its high prevalence, yet the point doubling its significance is that hypertension is an uncontrolled disease. Studies have shown that the role of nutrition in controlling this disease is undeniable, unfortunately there is a much evidence in contrast, and most patients do not actually heed dietary guidelines and only half of the patients have accepted following proper diet as part of the treatment. Following hypertension, it is important to control high blood pressure to minimize the probability of complications.[2,3] It appears that the root of these behavior and beliefs, inaccurate information, and poor awareness of the nature of the disease and nutrition are related. As one of the reasons for not controlling hypertension, poor nutritional awareness of patients has been reported and lack of information in these patients is considered an important issue.[4,5] Although it has been determined that awareness without other factors may be unable to modify behavior, it can be a determinant of one's dietary behavior.[6] Indeed, patient's knowledge is an important factor in accepting treatment and controlling these diseases.

A wide range of health care providers provide their services in the health system, yet nurses shape the base of the health care delivery system and have a critical role in coordinating and delivering health care. As nurses work with families in a variety of contexts such as clinics and schools, the significant role of community-based nursing is to reduce health risks, improve the health of various populations, and provide services to families.[7]

Hence, given the importance and effect of nutritional behavioral and awareness changes in health promotion and disease control and the use of care, the study was conducted to evaluate nutritional awareness of hypertensive patients and their dietary intake in patients admitted to Farshchian cardiovascular clinic in Hamadan, Iran in 2017.

Methods

Study Design and Participants
The present descriptive study was conducted in Farshchian cardiovascular clinic in 2017. In the study, 100 hypertensive patients and the inclusion criteria were selected using a convenient random sampling method. The sample size was calculated according to Kamran et al's[8] study.

Inclusion and Exclusion Criteria
Inclusion criteria were 30-60 years of age, mild to moderate hypertension approved by a physician, having at least 1-year history of hypertension, and having no known underlying disease in severe and critical stage (such as cancer, metastatic, and renal failure).

Sample, Sampling Strategy, and Sample Size
The data collection tool was a four-part questionnaire, including (1) Demographic characteristics questions, (2) Nutrition awareness questions, including 10 true-false questions with 1 scored for the correct answer and zero to "I do not know" and the wrong answer. (3) Hypertension perception questions were 14 questions in 2 domains based on 4-option Likert attitude scale (completely agree, agree, disagree, and completely disagree), where corresponds to response, scores 1 to 4 were given, with scores range 14-56. (4) Diet follow-up questions were 5 questions based on a 5-option scale (always, often, sometimes, rarely, never) with scores on these questions ranging from 1 to 5 and the total score ranging from 5 to 25 points. Obtaining points for each aspect summed up the scores for each of the following questions, with scores on illness perceptions ranging from 14 to 56 and nutritional follow-up questions from 5 to 25 and nutritional awareness questions 0 to 10. Then for ranking, the total score of each aspect is calculated based on 100 and the mean scores are set at three levels of desirable (mean score above 75), average (mean score 50-75) and unfavorable (mean score less than 50). In Kamran et al's study,[8] Cronbach's alpha, split-half, and Richardson coder were employed to examine the reliability, and the validity of the questionnaire was assessed by content and construct validity. The results of Spearman Brown coefficient, Cronbach alpha, Gutman and Coder Richardson in the questionnaire were satisfactory, which showed satisfactory reliability of the questionnaire. Questionnaire questions were highly correlated with the total score and internal consistency analysis showed that the questionnaire questions had acceptable reliability. In factor analysis, all questionnaire questions had acceptable factor loadings and based on the factor analysis, all questionnaire questions were significant and had appropriate construct validity. Moreover, this questionnaire was approved by professors with a validity coefficient which was above 0.90. Cronbach's alpha for all

aspects was above 0.80. In the study of Kamran et al,[8] both validity and reliability of this questionnaire were confirmed by colleagues.

Outcome
After determining the number of participants among those admitted to Farshchian cardiovascular clinic in Hamadan, Iran those with the inclusion criteria were selected after obtaining their consent, as the researcher fully explained the research process to them. To avoid the effect of some dummy variables, their effects were controlled by modeling in data analysis. Then, the questionnaires were filled out by the individuals. The demographic questionnaire was completed and then the questionnaires of nutritional knowledge, illness perception, and dietary follow-up were completed in hypertensive patients.

Statistics
Descriptive statistics was used to analyze the data. Data were then analyzed using SPSS version 16 software. Descriptive statistics, such as mean and standard deviation (for quantitative variables such as age, duration of illness), as well as indices of number and percentage were used to report other cases.

Results
One-hundred patient were included in this study. According to the results, the mean score of knowledge was 4.73 ± 1.55 and according to the questionnaire, 58% of patients did not have the necessary knowledge about high-fat diet and 56% did not know that eating red meat was effective in raising blood pressure (Table 1).

The mean score in the perception domain according to the results of the questionnaire was 29.58 ± 3.94. Thirty-eight percent stated that the disease was behaviorally uncontrollable. Then, 43% of patients strongly disagreed that it could cause premature death and 56 % did not believe there was a need to restrict salt and fat intake, and only 12% believed the disease could be a threat to their health (Table 2).

The mean score according to the questionnaire results was 9.45 ± 2.27 in the diet follow-up domain and 46% of the patients stated that they never follow the recommended diet when they are at home, while only 2% of hypertensive patients adhere strictly to their disease diet at home. Moreover, 29% of the patients reported that they did not adhere to their diet when in the society and outdoors. According to these results, one can conclude that nutritional awareness, disease perception, and dietary follow-up are impaired in hypertensive patients and need follow-up and remedial action (Table 3).

Discussion
The current study which examines nutritional awareness, illness perception, and dietary follow-up in hypertensive patients showed that those who were more aware and had an understanding of their disease and were more likely to adhere to the treatment regimen were less likely to develop complications. Moreover, patients who believe their health status is under their personal control, feel more responsible

Table 1. Questions and Percentage of Responses Related to Nutritional Awareness of Patients With Hypertension

Questions	Correct	False
Animal fats, such as natural butter increases blood pressure	42 (42%)	58 (58%)
Bread and whole grains help decrease blood pressure	40 (40%)	60 (60%)
A person with hypertension should not consume oils such as almonds, pistachios, hazelnuts, and walnuts	55 (55%)	45 (45%)
The patients with hypertension have to consume at least 4 to 5 units of vegetables per day (each unit is equal to one glass of raw leafy vegetables or one second of cooked vegetable glass).	24 (24%)	76 (76%)
Milk and other low-fat dairy products are harmful to a person with hypertension.	62 (62%)	38 (38%)
Consuming red meat has a role in increasing blood pressure.	44 (44%)	56 (56%)
In hypertension, diet is only restricted to salt intake.	67 (67%)	33 (33%)
Consuming foods like chicken and fish have an effect on raising blood pressure.	35 (35%)	65 (65%)
A person with hypertension should avoid sweets.	63 (63%)	37 (37%)
Sweet drinks such as carbonated drinks can have a harmful effect on blood pressure.	63 (63%)	37 (37%)

Table 2. Questions and Percentage of Responses relevant to Understanding Patients with Hypertension

Questions	Completely Agree	Agree	Against	Completely Opposed
I believe it is a disease not controlled by my behavior	8 (8%)	18 (18%)	36 (36%)	38 (38%)
It is a disease that I sometimes recover and sometimes suffer	11 (11%)	14 (14%)	40 (40%)	35 (35%)
There is a time when there is a sign	8 (8%)	8 (8%)	33 (33%)	51 (51%)
It is curable with medication and other remedies	14 (14%)	11 (11%)	29 (29%)	46 (46%)
It can be in silent and asymptomatic state	15 (15%)	8 (8%)	29 (29%)	48 (48%)
It can cause an earlier death (premature death)	12 (12%)	9 (9%)	36 (36%)	43 (43%)
Medications work best when they have symptoms	11 (11%)	16 (16%)	30 (30%)	43 (43)
It can get worse with my lifestyle and my behavior	14 (14%)	14 (14%)	30 (30%)	42 (42%)
It is a threat to my health	14 (14%)	11 (11%)	29 (29%)	46 (46%)
It is completely curable and healing	12 (12%)	9 (9%)	30 (30%)	49 (49%)
It needs treatment even if I feel healthy	21 (21%)	9 (9%)	28 (28%)	42 (42%)
It may enhance with medication over a long period of time	13 (13%)	8 (8%)	30 (30%)	49 (49%)
The treatment plan (medication, nutrition, etc) should be followed for life.	16 (16%)	7 (7%)	20 (30%)	57 (57%)
It needs restrictions on salt and fat intake	10 (10%)	12 (12%)	22 (22%)	56 (56%)

Table 3. Questions and Percentage of Response Relevant to Diet Follow-up of Patients With Hypertension

Questions	Always	Often Times	Sometimes	Rarely	Never
I follow a recommended diet when I'm at home (low salt)	2 (2%)	5 (5%)	6 (6%)	41 (41%)	46 (46%)
I keep track of when I am at work and workplace	4 (4%)	4 (4%)	6 (6%)	35 (35%)	51 (51%)
I adhere when observing exercise or recreation	2 (2%)	5 (5%)	11 (11%)	39 (39%)	43 (43%)
I adhere when my general condition is good	6 (6%)	4 (4%)	15 (15%)	46 (46%)	29 (29%)
I adhere when I am present in the community and among the people I observe	6 (6%)	4 (4%)	11 (11%)	40 (40%)	39 (39%)

for their health and adhere to treatment. In the examinations by the researcher, few studies were found concerning the perception of the disease in hypertensive patients in Iran, showing the necessity of further studies in this regard.

In the area of awareness, a study that is consistent with the present study is performed by Booth et al[9] that addresses patients' need for awareness. The results of their study showed that education (awareness) and follow-up care significantly reduced smoking and reduced salt intake, reducing the risk of heart disease recurrence and mortality.

The results of this study can be used to inform health care managers and service personnel to take necessary measures to increase follow-up training. Adherence to the diet is of great significance in hypertensive patients. This has reduced

the number of frequent referrals and hospitalizations to emergencies and clinics, which is both economically and psychologically difficult for patients and families.

Taking this into account, a quasi-experimental study was conducted by Babaei-Sis et al.[10] According to its results, the mean scores of exercises, weight control, nutrition, and mental health in the experimental group significantly increased after the intervention ($P < 0.05$), but the changes in the control group were not significant ($P < 0.05$). The educational intervention had a significant effect on blood pressure in the experimental group compared to the control group ($P < 0.05$). The results showed that educational intervention was effective in promoting physical activity, improving weight control, nutrition, and mental health in hypertensive patients. Other

studies that are in line with the present study are those of Cheraghi et al[11] and Hosseini et al[2] stating with the knowledge gained about diet therapy and the emphasis on diet, one can reduce the complications of the disease.

In understanding domain, the studies conducted by the researcher showed that there are few research studies on the understanding of the disease in Iranian hypertensive patients, suggesting the necessity of further studies in this regard. In the study by Kamran et al, perception was suggested as a determinant in the diet of hypertensive patients.[8] Perception has been recognized in studies as an important factor in nutritional behavior. These results are justified by behavioral theories as planning for a behavior depends on the outcomes and benefits that are anticipated. In their study, Rajpura and Nayak reported a positive relationship between the perception of illness and positive beliefs about treatment in hypertensive elderly with high treatment adherence.[12] Moreover, the results of the study by Kang et al[13] showed that patients who understand their disease status adhere more to their diet. The results of the study by Saarti et al[14] indicated that the mean scores of disease perception in patients with good adherence were higher than those with poorer adherence, yet no significant relationships were observed. In this study, education and home care improved the perception of diet and its relation to the disease in hypertensive patients. Hence, this type of training can be an important step in enhancing patients' understanding of their condition and subsequently improving adherence to specific diet and therapies.

In the dietary follow-up domain, the results suggest that dietary follow-up can have a significant role in improving the process of hypertension and according to the results of the present study, the need for dietary follow-up is quite sensible. Consistent with the present study, Mohammadi et al[15] performed a follow-up study on the effect of follow-up on blood pressure control in hypertensive patients. Based on their findings, follow-up improved the diet of hypertensive patients. Regarding dietary patterns, there was a significant difference in dietary intake after the intervention.

Among the other studies that have examined and evaluated the need for dietary follow-up, one can cite the ones by Rahimi et al[16] or Hacihasanoğlu and Gözüm.[17] According to the results of this study, one can conclude that by implementing the continuous care model, there is a significant difference in the levels of general and specific aspects of patients' life quality, so that the implementation of this care model is associated with an increase in patients' life quality.

Another study in line with the present study is the one by Hashemi et al,[18] entitled "Examining the effect of continuous care model on diet adherence of hemodialysis patients." Their study was a controlled clinical trial study conducted on 98 hemodialysis patients in Baqiyatallah and Chamran hospitals in 2013. According to the results, most hemodialysis patients did not have proper dietary compliance. There was a significant relationship between the model of continuous care and diet adherence ($P = 0.0001$). According to the results, patients under the influence of the follow-up care model had better diet adherence by counseling and education, thus it is

Research Highlights

What Is Already Known?
Non-adherence to treatment has led to many deaths and many complications for patients.

What This Study Adds?
Adherence to treatment is low in cardiac patients in Iran, hence educational interventions are recommended.

recommended that Intensive care units adopt this model to preclude complications and enhance the diet of hemodialysis patients.

Conclusion
The results of this study showed the need for awareness and increased perception and follow-up of diet in hypertensive patients and non-adherence to pharmacological and non-pharmacological regimens are associated with hypertensive complications, such as stroke. Dietary awareness and understanding of the disease and its increased and effective diet can reduce the complications of hypertension in patients with hypertension.

Authors' Contributions
Conceptualization, MK, SF; Data curation, NM; Formal analysis, LT, NM; Funding acquisition, MK, SF; Writing – original draft, SF, MK; Writing – review and editing, MK, SF, LT, and MN.

Conflict of Interest Disclosures
The authors declare no conflicts of interest.

Ethical Approval
This study was approved by Ethics Committee of Hamedan University of Medical Sciences with code IR.UMSHA. REC.1396.41.

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