

Research Paper

Effect of an Intervention Based on the Theory of Planned Behavior on Self-Care Behavior of Patients With Hypertension: A Clinical Trial



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**ABSTRACT**

**Background** Hypertension is an important health problem and one of the most important causes of disability and mortality.

**Objective** This study aims to evaluate the effect of an educational program based on the Theory of Planned Behavior (TPB) on self-care behaviors in hypertensive patients.

**Materials and Methods** This is a clinical trial conducted on 180 patients with hypertension referred to health centers in Rasht, Iran in 2014. They were divided into two intervention (n=75) and control (n=75) groups. Data collection tools included a demographic form, the Global Physical Activity Questionnaire, the Food Frequency Questionnaire, and a TPB questionnaire with five constructs including attitude, subjective norms, perceived behavior control, and behavioral intention related to hypertension. Collected data were analyzed in SPSS v. 18 software using descriptive and inferential statistics.

**Results** Before intervention, two groups were similar in terms of the scores TPB constructs. After intervention, the mean scores of attitude changed from 4.51 to 4.58; mean scores of subjective norms changed from 4.16 to 4.19; mean scores of perceived behavior control changed from 3.64 to 4.23; and mean scores of behavioral intention changed from 3.88 to 4.24. These differences were statistically significant (P<0.05). No difference was observed in the control group.

**Conclusion** An educational program based on TPB can promote the self-care behaviors among hypertensive patients.

**Extended Abstract**

**1. Introduction**

Cardiovascular diseases account for to a significant rate of mortalities in the world and are the most important causes of mortality in the United States [1]. Hypertension is

one of the most important risk factors for cardiovascular patients [2, 3] whose prevalence increases by increase of age [4]. It is one of the general health problems worldwide. Hypertension is defined as a systolic blood pressure of 140 mmHg and higher and diastolic blood pressure of 90 mmHg and higher [5]. The global prevalence rate of hypertension was 26.4% in 2000 and it is estimated that about 1.54 trillion adults will suffer from this disease by

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2025 [6]. The control and treatment of hypertension is one of the essential issues for both physicians and patients [7]. Regular control of hypertension can prevent or postpones its common complications [8], and can decrease deaths and disabilities caused by heart diseases [9, 10]. Early diagnosis and treatment of this disease can reduce 45% of heart disease-related deaths and 58% of cardiovascular disease-related deaths [11]. This study aims to assess the effects of a program based on Theory of Planned Behavior (TPB) on self-care behaviors among hypertensive patients.

## 2. Methods

This is a clinical trial. Data collection tools were a demographic form surveying age, gender, occupation, marital status, education level, history of smoking and high blood pressure; the Global Physical Activity Questionnaire (GPAQ) with 16 items; the Food Frequency Questionnaire (FFQ), and a TPB questionnaire with five constructs of attitude (4 items), subjective norms (5 items), perceived behavioral control (3 items), and behavioral intention (4 items) related to hypertension. Its items related to attitude are rated on a 5-point Likert scale (strongly agree, agree, no idea, disagree, strongly disagree) and the score ranged from 4 to 20. The items related to subjective norm construct rated on 5 point Likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) with a score ranged from 5 to 25. The two items related to perceived behavioral control construct rated on a 5 point Likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) with a score ranged from 2 to 10, and the third item rated as completely, high, low, very low, and never with a score ranged 1-5. The three items related to behavioral intention construct rated as completely true, somewhat true, no idea, not true, not true at all with a score ranged from 3 to 15, and the final item rated as always, often, rarely, sometimes, and never with a score ranged 1-5. The highest score of these constructs indicates the best personal performance.

## 3. Results

The mean age of participants (n=150) was 56.08 years and the majority of them were married, female, and house-keeper. One-third of them regularly referred to control their weight and the most of them were taking blood pressure medications. Most of them had no history of receiving relaxation therapy to reduce their stress. The statistical test results showed a significant statistical difference between the control and intervention groups after intervention in all constructs of TPB ( $P < 0.05$ ) (Table 1).

## 4. Discussion and Conclusion

The goal of this study was to improve self-care behaviors in hypertensive patients. For this purpose, behavioral goals such as physical activity, DASH diet, and correct consumption of hypertension drugs were used. The results showed that the use of TPB-based intervention can help hypertensive patients to adopt and to have self-care behaviors. For generalizing the results to other groups, the cultural and social factors should be considered.

## Ethical Considerations

### Compliance with ethical guidelines

This study was approved by the Ethics Committee of the Guilan University of Medical Sciences (Code: 4930231618) and was registered by Iranian Registry of Clinical Trials (Code: IRCT2016011622984N1). All ethical principles were observed in this study. The participants were informed about the research objectives and methods and were assured of the confidentiality of their information, and were free to leave the study at any time.

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**Table 1.** Mean and standard deviation of behavioral intention construct of TPB in two study groups before and 2.5 months after intervention

| Group        | Mean±SD             |       |                    |       | P     |
|--------------|---------------------|-------|--------------------|-------|-------|
|              | Before Intervention |       | After Intervention |       |       |
| Intervention | 3.88                | 0.743 | 4.27               | 0.526 | 0.001 |
| Control      | 4.15                | 0.679 | 4.13               | 0.524 | 0.506 |
| P            | 0.06                |       | 0.001              |       |       |

#### **Authors' contributions**

All authors equally contributed to preparing this article.

#### **Conflicts of interest**

The authors declared no conflict of interest.

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