

Comparison of the Emotional Control and Level of Anger in Hypertensive and Normotensives Subjects

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Article Info	ABSTRACT
<p>Article type: Original article</p>	<p>Background and Aim: Hypertension is a common problem in many societies which can be prevented in many cases. Various factors contribute to this disease, such as psychological factors. Therefore, the present study aimed to compare the level of emotional control and anger in hypertensive and normotensive subjects in Arak city, Iran.</p>
<p>Article History: Received: 29 December 2019 Revised: 28 May 2020 Accepted: 30 May 2020</p>	<p>Materials and Methods: The present analytical descriptive study made a comparison between the hypertensive and normotensives subjects. For this purpose, the statistical population included all the individuals who referred to the Imam Reza clinic in Arak in 2018. The samples were selected using purposive sampling and divided into 2 groups. The first group included 100 essential hypertension patients while the second group included normotensives subjects. The data were collected using the Emotional Control Questionnaire and the Standard Anger Control Questionnaire. Moreover, the data were analyzed in SPSS software (version 23) using a t-test and multivariate analysis of variance.</p>
<p>Keywords: Anger Emotional control Emotions Hypertension</p>	<p>Results: Based on the results, the level of anger in hypertension patients was significantly higher than the other group. The mean scores of hypertensive and normotensive subjects were 55.43 ± 15.12 and 48.93 ± 16.25, respectively ($P < 0.01$). Moreover, the mean score of emotional control of normotensive subjects was significantly higher (19.82 ± 10.25) than hypertension patients (13.37 ± 10.08) ($P < 0.01$).</p> <p>Conclusion: The results were consistent with most studies previously performed in this field. It can be concluded that it is possible to control hypertension by using techniques to control emotion and reduce anger.</p>

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Introduction

In total, one-eighth of the global deaths are due to hypertension which makes it the third leading cause of death in the world (1). Based on the statistics, nearly 25% of adults are inflicted with hypertension. According to the results of the meta-analysis of 29 studies that were conducted in Iran, the articles about the prevalence of hypertension were heterogeneous (2). In Iran, based on the statistics extracted from the "Healthy Heart Program", the prevalence of hypertension among people of 35-65 years old is 23.2%, which is reported to be 25.1% and 21.5% in men and women, respectively (3). The prevalence of

hypertension in Iran has been estimated at 11% (4).

Hypertension increases the risk of Atherosclerosis, heart attack, and strokes, and can lead to death through end-stage renal disease (5). Genetic (e.g., family history), environmental (e.g., salt consumption, obesity, and alcohol consumption) (6), psychological (e.g., personal characteristics, coping styles in the face of stressful situations, self-confidence, suppressed anger, and personality type), and social (e.g., occupation, income level, marital status, loneliness, and social isolation) factors play an important role in causing

hypertension (7).

Despite the fact that stressful events and the resulting stress are considered to be the cause of this disease, one's personality traits and coping styles in the face of challenges in life play a more definitive role. People who have weak and inefficient coping resources in the face of stress are more likely to develop hypertension. According to the previous research performed on people with essential hypertension, they are more likely to use emotionally suppressive coping styles, such as denial and suppression (8).

Elevated blood pressure and heart rate as well as physical irritability can be dangerous. Moreover, if anger is suppressed and not expressed, it increases the sense of hostility within the individual and impairs his/her performance at interpersonal and social levels, compatibility with others, goal achievement, family life, and job opportunities (9).

The results of previous studies have revealed a high level of anger and hostility as well as prolonged stress in people with essential hypertension. The previous history of research in this regard has highlighted the important role of emotional control in reconciling with stressful and life-threatening events (10). Emotional control implies the use of thoughts and behaviors that affect human emotions. When human beings control their emotions, they also control how they experience and express their emotions (11).

Hypertension patients have higher scores on self-blame, other-blame, focus on thought, and catastrophizing, and lower scores on positive refocus and positive reassessment, compared to healthy people (12). Furthermore, based on previous studies, people with cognitive disorders and depression had high blood pressure and were angrier than normotensive people (13). However, in some studies, including a study on people over 20 years old who were suspected of having hypertension in Tabriz, no association was found between aggression and blood pressure (14). Given this informational niche, the present study aimed to determine the relationship of hypertension with emotional control and anger management.

Materials and Methods

Statistical population, samples, and sampling method

The statistical population of this descriptive-analytical study included all people who referred to Imam Reza Clinic in Arak with essential hypertension and their normotensive companions. The patient accompaniments were selected since

their lifestyle and socioeconomic status were expected to be almost the same as the patients. People with underlying and incurable diseases were excluded from the study.

After informing the hospital staff, the patients who were diagnosed with hypertension were selected using the purposeful sampling method. Moreover, the study was introduced to them and they were assured that participation in this study did not interfere with their treatment process. Afterward, written informed consent was obtained from the eligible subjects who were willing to participate in the study. Finally, information was collected on 200 subjects in two groups (n=100). Both groups included a balanced number of men and women and the age of the two groups was homogenous.

It should be noted that prior to the implementation of the research, the research proposal had been approved by the Research Committee of the Islamic Azad University (Arak Branch). Besides, in order to respect the ethical considerations of the research, the subjects were volunteered and their information was kept confidential. The collected data were analyzed using the t-test and multivariate analysis of variance.

Data collection tools

Emotional Control Questionnaire (ECQ)

Roger and Najarian (1984) developed the initial structure of the ECQ which later was revised by Roger et al. (1989). The questionnaire has 56 items and four subscales, namely emotional inhibition, aggression control, rumination, and benign control. Each subscale has 14 items, which are scored 0 and 1. Therefore, the score of each subscale is within the range of 0-14 while the overall scale ranges from 0 to 56. It should be noted that higher scores on this scale indicate higher emotional control. Cronbach's alpha coefficient was reported to be 0.68 for the whole scale and 0.70, 0.76, 0.76, and 0.85 for the emotional inhibition, aggression control, rumination, and benign control subscales, respectively (15).

The reliability and validity of this questionnaire in Iran have been reported in several studies. For instance, in a previous study, the reliability values of the subscales have been determined through the internal consistency of the items and were 0.77, 0.81, 0.86, and 0.79 for emotional inhibition, aggression control, rumination, and benign control, respectively (16). In the present study, based on Cronbach's alpha coefficient, the reliability value of the whole scale and the subscales of emotional inhibition, aggression control, rumination, and benign control were 0.72, 0.73, 0.74, 0.76, and 0.67, respectively.

Standard Anger Control Questionnaire

This questionnaire was evaluated in Iran by Rezakhani and its reliability was estimated at 0.81 (17). It includes 25 items in three subscales of anger (5 items), anger in personal relationships (10 items), and anger in social situations (10 items). Each item of each of the three sections is scored 1, 3, and 5, and a higher score indicates more anger control. Total score of the questionnaire in the first part was within the range of 5-25 while a score of 5-10 indicated fear of one's own and others' anger which results in the lack of the expression of anger. A score of 11-17 indicated an awareness of anger and a score above 17 indicated a hostile and threatening character.

The items in the second part are about control or expression of anger in the personal and family life while the questions in the third part are about control or expression of anger in social situations. The score of the subject should have been within the range of 20-100 and a total score of 75 in the second and third sections indicated that the participant expressed their anger. A score of less than 50 indicated the suppression of anger while a score of 51-74 was indicative of anger control (18). In the present study, the reliability of the questionnaire based on Cronbach's alpha coefficient was 0.78.

Results

The mean ages of essential hypertension patients and normotensive subjects were 48.3 and 47.5, respectively. In terms of gender, 57 and 43 of the

essential hypertension patients were male and female, respectively. On the other hand, 46 and 54 of the normotensive subjects were male and female, respectively. Regarding their marital status, 89 and 11 of essential hypertension patients were married and unmarried, respectively. Moreover, 94 and 6 normotensive subjects were married and unmarried, respectively.

After examination of the t-test assumptions and the normality of the data distribution function, the results of the study revealed that the mean score of the anger of hypertensive subjects was significantly higher than normotensive subjects ($P < 0.05$) (Table 1).

The results revealed that the level of anger and anger in personal relationships was significantly higher in hypertension patients than normotensive subjects. However, regarding the component of anger in social status, there was no significant difference between the two groups (Table 2). Moreover, emotional control was significantly higher in normotensive subjects than hypertension patients (Table 3).

According to the results shown in Table 4, the groups of hypertension patients and people with normal blood pressure had a significant difference regarding three components of emotional control, namely emotional inhibition, aggression control, rumination, and benign control which were higher in people with normal blood pressure, compared with the hypertension patients. However, there was no significant difference between the two groups in terms of benign control.

Table 1. Results of the t-test regarding the level of anger in hypertensive and normotensive subjects

Group	Number	Mean	SD	Standard error	t-value	Degrees of freedom	P
Hypertension patients	100	55.43	15.12	1.51	2.927	198	0.004
People with normal blood pressure	100	48.93	16.25	1.62			

Table 2. Results of the analysis of variance of anger variable in hypertensive and normotensive subjects

Dependent variable	Sum of squares	Degrees of freedom	Mean squares	F-statistic	Sig.	Eta squared
Level of anger	142.805	1	142.805	8.435	0.004	0.041
Anger in personal relationships	156.645	1	156.645	4.684	0.032	0.032
Anger in social situations	50.00	1	50.00	0.519	0.472	0.003

Table 3. Results of the t-test regarding emotional control in hypertensive and normotensive subjects

Group	Number	Mean	SD	Standard error	t-value	Degrees of freedom	P
Hypertension patients	100	13.37	10.08	1.00	-4.486	198	0.001
People with normal blood pressure	100	19.82	10.25	1.02			

Table 4. Results of the analysis of variance of emotional control in hypertensive and normotensive subjects

Dependent variable	Sum of squares	Degrees of freedom	Mean squares	F-statistic	Sig.	Eta squared
Emotional inhibition	98.00	1	98.00	8.903	0.003	0.043
Aggression control	508.805	1	508.805	42.674	0.001	0.177
Rumination	47.045	1	47.045	6.148	0.014	0.030
Benign control	2.645	1	2.645	0.475	0.491	0.002

Discussion

The present study aimed to determine the relationship of hypertension with emotional control and the level of anger. The results of the present study were consistent with those of a study performed by Sharpe et al. (2014) which indicated that the level of anger in hypertension patients was more than normotensive people (13). In another study conducted by Faramarzinia et al., a significant relationship was found between anger and chronic hypertension regarding the indicators of anger arousal, situations of anger, motivation of hostile attitude, and internal anger (19). The results of a study performed by Marty et al. revealed that the component of anger was a predictor of blood pressure in men (20).

Moreover, Bar-On and Parker believe that emotional control implies the use of thoughts and behaviors that affect human emotions. When human beings control their emotions, they also control how they experience and express their emotions (11). The results of the present study were consistent with those of another study carried out by Fekri et al. which indicated that people with essential hypertension had difficulty in identification and description of emotions, poor objective thinking ability, and alexithymia (12).

Furthermore, the findings of a study performed by Namdar et al. revealed that male patients achieved a higher score in the scale of adventure and excitement, compared to female patients (21). Moreover, in the above-mentioned study, healthy men obtained a higher score in the subscale of sensitivity to monotony and boredom than healthy women, while the score of healthy women regarding the subscale of adventure and excitement was higher than that of female patients (21). Sadock and Sadock (2007) argue that rumination is a form of extra cognition and includes constant mental engagement with a thought or subject (22).

Hypertension patients are often anxious and worried which can lead to emotional processing issues and poor assessment of stressful situations. Besides, these people are not able to control their emotions due to their physical problems (i.e., high blood pressure) and become restless. For example, according to the findings of a study, hypertension patients had restless leg syndrome and the risk of high blood pressure in patients with restless leg syndrome was 3.6 times more than patients without restless leg syndrome (23).

Since hypertension is one of the most common risk factors for cardiovascular diseases (24), prevention is emphasized in order to reduce the emergence of intense emotions and deep anger in hypertension patients. Moreover, the use of various

treatments can help the patients to control their emotions and reduce their anger. Research has shown that the use of some techniques, such as muscle relaxation and biofeedback is effective in the reduction of intense emotional states in hypertension patients (25).

The results indicated that there was no significant difference between the two groups regarding the component of anger in social situations (from the components of anger) and the component of benign control (from the components of emotion control). This could be due to environmental, cultural, and personality factors. In general, high levels of anger, hostility, and prolonged stress are common in hypertension patients.

On the other hand, hypertension can affect different aspects of one's life and have many negative consequences. In this regard, the results of a previous study have revealed that there is a statistically negative relationship between blood pressure and the social-psychological adjustment of individuals, and thereby hypertension made social-psychological adjustment difficult (26).

Conclusion

According to the results, the level of anger in hypertension patients was higher than normotensive people. Therefore, the authors recommend health-related institutions to hold educational classes in this regard in environments, such as clinics and workplaces. In addition, radio and television programs play a very important role in raising the awareness of the society. Hence, it is suggested to prevent adverse consequences by the publication of educational books on life skills, such as the control of emotions and effective coping strategies against negative emotions and tensions, as well as anger management.

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Conflicts of interest

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