Original Article

The Effect of Prayer on Blood Pressure of Women in Isfahan in 2005

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Abstract

BACKGROUND: Hypertension is one of the most important, non-contagious diseases. Every year many people either die or suffer from it. Therefore, the first step is to screen prehypertensive people and change the manner of their life style. Nowadays, prayer in complementary alternative medicine (CAM) is known as an important factor in changing people's lives. This study is done with the goal of defining the effects of prayer on blood pressure of women in Isfahan.

METHODS: This study is a random controlled clinical trial. There were 60 pre hypertensive women aged 25-45 years randomly selected. They were divided into 2 groups of intervention and non-intervention based on their criteria to be included in the study. In intervention group, they were given tapes of selected prayers but in non intervention group they were not. The data were collected by questionnaires, checklist and interviews.

RESULTS: Both groups were not identical regarding age, occupation, marital status, and educational level. The findings showed that in intervention group, systolic blood pressure before intervention was 132.93 mm/Hg and after that 128.70mm Hg (with a decrease of 4.23 mm/Hg). Diastolic mean blood pressure before intervention in intervention group was 84/42 mm/Hg and after 83.48mm/Hg with a nearly 1 m/Hg decrease. The difference between the mean of systolic and diastolic blood pressures before and after intervention was significant (P<%5).

CONCLUSIONS: This research suggests that saying prayers as a part of complementary medicine is a non-Medicational way with no side effects in prehypertensive people.

KEY WORDS: Prayer, blood pressure, women.

Hypertension is one of the biggest problems facing industrial countries and will gradually become one of the factors results in death caused by coronary artery disease (CAD), cerebrovascular attack and renal insufficiency. Hypertension without side effect is an asymptomatic status and most of people are not aware of having it [1,2]. This disease has been named the silent killer because it is often diagnosed after experiencing a heart or brain attack [3] or through a physical examination [4]. According to obtained statistics in the developed countries, 25% of adults have hypertension [5,3]. The risk of CAD is two times more in adults with a blood pressure of 140/90 mmHg comparing with a blood pressure of 120 mmHg [2]. An increase of 7.5 mmHg

in the mean arterial pressure will increase the stroke risk by two times. Even a decrease of 5-6 mmHg in diastolic blood pressure and 10-12 mmHg in systolic blood pressure will decrease the stroke risk 38-40 percent. To understand the importance of controlling blood pressure, we should mention this point that only a 2 mmHg decrease in diastolic blood pressure will decrease the stroke risk 5 percent [6]. The American Heart Association (AHA) has reported that individuals with systolic and diastolic blood pressure of 120-139 mmHg and 80-89 mmHg respectively are recognized as pre-hypertensive people and need health improvement through changes in their life style to prevent cardiac diseases [3,7]. The basic and certain treatment for all pre-hypertensive

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patients is changing their life style [8]. Most physicians recommend the changing of patient's way of life before advising drugs to control their blood pressure which is taken as complementary alternative medicine (CAM) [9]. Holistic medicine has various types. Generally, the treatment of a chronic or acute disease is categorized in one of these types.

One of these categories is psychological treatments which include silent prayer, psychotherapy, relaxation and prayer [10]. In all cultures, prayer plays a vital role in the cure and improvement of patients. Silent prayer or non-verbal prayer was followed by useful physical effects such as decrease in the number of breathes, heart rate, blood pressure and decrease in the temperature of the body and it also has positive effects on relief of pain, vomiting and sleeplessness [11]. As we read in the Quran "remembrance of God calms hearts" [12]. Imam Sadeq (peace be upon him) stated that always pray, because it heals every pain [13].

In the medical center of Duck University in northern Caroline in 2001, a descriptive cross-sectional research was performed to determine the relation between religious believes and race with 24-hours monitoring the blood pressure of 155 samples of black and white women and men. The findings showed that systolic blood pressure in people with strong beliefs is 6-7 mmHg less than people with weak beliefs [14]. Noting these results and regarding the effectiveness of prayer and also differences in beliefs and cultures of Iran's society, it seemed necessary to do a research for evaluation of the effects of prayer on blood pressure of women in Isfahan in 2005.

Methods

This study was a randomized controlled clinical trial. The research population included women of 25-45 years that were residents of Isfahan. The research samples were also selected randomly during multiple stages from research population. The number of samples was determined by the sample formula with the reliability level of 95 percent =5% and exam validity of 90 percent. Samples were randomly classified into two groups as following; 30 people with the intervention and 30 people without the intervention. The criteria to be included in the study were women of 25-45 years that had no identified diseases, did not use OCP, did not use analgesic drugs 24 hours before the study, have not had premature abortion, did not have stress or anxiety during a week before the study, their blood pressure was between 120/80 and 140/90 , that were Iranian Shiite, had at least the ability to read and write, have not used weight loss or gain diets and inform the researcher about any stress or anxiety during study. The research environment was Isfahan. For this purpose, after selecting 13 places randomly and referring to the addresses, samples with the defined criteria were chosen and classified randomly into two groups. Clinical systolic and diastolic blood pressure parameters were controlled and registered before the intervention in both groups. The intervention group were given tapes of selected prayers and asked to listen to them at least 3 times for 10 days.

Then, the researcher referred to each of the samples' houses in the 4th, 7th and 10th days and the prayer was performed for each sample once again in the presence of the researcher, after that blood pressure was taken and registered again. In the control group blood pressure was controlled and registered only at the beginning and end of the intervention (1st and 10th day). Data were collected by questionnaire, checklist and interview by the researcher. The questionnaire included demographic data (age, occupation, marital status, and educational level) and the checklist involved two parts. The first part was related to the examination of the health status and having no recognized diseases and the second part was related to cases effecting blood pressure and data related to the purpose including the scaling of systolic and diastolic blood pressure. For validity and reliability of the tools, we used a German Richter mercurial blood pressure and a Littman statuscope. The scientific reliability of blood pressure operative sys-

tem was compared with results of similar systems. For its calibration all blood pressures were scaled by one system and researcher. The data were analyzed by descriptive statistics, inferred methods, squeere k, paired and independent t-tests. P<0.05 was considered to be statistically significant.

Results

The mean age in the intervention and control groups was 37.9 and 36.8 years old, respectively. The priority of the intervention group was employed (63.34 percent) and in the control group were mostly housewives (56.67 percent). Most of peoples in the intervention and control group were married (90 and 93.34 percent respectively), the priority of the intervention group had higher education (40.0 percent) and most of the control group had elementary education (43.3 percent). Both groups were compared in age range, occupation, education level and marital status and they were no significant statistically difference.

In the intervention group, 13.33 percent of the women's systolic blood pressure was under 125mmHg before the intervention while after the end of the third stage of the intervention this percent increased to 33.34. Furthermore 33.34 percent of the members had systolic blood pressure of 130-134 mmHg before the intervention and 43.33 percent had a systolic blood pressure of higher than 135mmHg

but after the end of the third stage of the intervention they decreased respectively to 16.66 and 23.34 percent. The mean and standard deviation of systolic blood pressure in the intervention group were 132.93 5.27 before the intervention and 128.70± 6.56 after the end of the third stage, the difference between the mean before and after the intervention was statistically significant (P=0.000, P<0.001)

In the control group, 6.66 percent of the members' systolic blood pressure was below 125 mmHg before the intervention. But after the end of the 10th day it increased to 16.67 percent. Moreover, 16.67 percent of the members had a systolic blood pressure of 130-134 mmHg and 26.67 percent had a systolic blood pressure higher than 135 before the intervention but after the end of the 10th day they reached 16.67 and 26.33 Percent, respectively which was not statistically significant. The mean and standard deviation of the systolic blood pressure in the control group before the intervention was 130.87±4.41 but it changed to 129.87±4.92 after the end of the 10th day. A significant statistically difference was seen between the mean before and after the end of the 10th day (P=0.039, P<0.05). Hot environment accompanied with vasodilatation and using little liquid leads to a decrease in blood pressure [15]. It seems that the becoming significant of P in the non- intervention group to 1 mmHg resulted from the effectiveness of

Table 1. Absolute and partial frequency distribution of the studied units according to the systolic blood pressure before intervention and after three stages of intervention in the intervention group and the first day of the control group

Intervention & control groups	Pre-intervention	The first stage of the intervention	The second stage of the intervention	The third stage of the intervention	The results of the test	Control (The first day)	Control (the 10th day)	The results of the test
Systolic blood pressure mmHg	Number (%)	Number (%)	Number (%)	Number (%)	The intervention group	Number(%)	Number (%)	Non-Intervention group
Below 125	4 (13.33)	5 (16.66)	8 (26.67)	10 (33.34)	t=6.15	2 (6.66)	5 (16.67)	t=2.165
125-129	3 (10.0)	9 (30.0)	9 (30.0)	8 (26.67)	df=29	15 (5.0)	13 (40.33)	df=29
130-134	10 (33.34)	8 (26.67)	6 (20.0)	5 (16.66)	P=0.000	5 (16.67)	5 (16.67)	P=0.039
Higher than 135	13 (43.33)	8 (26.67)	7 (23.33)	7 (23.33)		8 (26.67)	7 (26.33)	
Sum	30 (100)	30 (100)	30 (100)	30 (100)		30 (100)	30 (100)	
Mean	132.93	130.62	129.38	128.70		130.87		
Standard deviation	5.21	6.03	6.08	6.56		4.41	4.92	

Table 2. Absolute and partial frequency distribution of the studied units according to diastolic blood pressure before the intervention and three stages after the intervention in the intervention group and the first day of the control group

intervention& control groups	Pre-intervention	The first stage of the intervention	The second stage of the intervention	The third stage of the intervention	The results of the test	Control (the first day)	control(the 10th day)	The results of the test
Diastolic blood pressure mmHg	Number (%)	Number (%)	Number (%)	Number (%)	The intervention group	Number (%)	Number (%)	control group
80-84	19 (63.34)	20 (66.67)	21 (70.0)	23 (76.66)	t=3.85	24 (80.0)	24 (80.0)	t=0.799
Higher than 85	11 (36.66)	10 (33.33)	9 (30.30)	7=(23.34)	df =29	6 (20)	6 (20)	df=29
Sum	30 (100)	30 (100)	30 (100)	30 (100)	P=0.001	30 (100)	30 (100)	P = 0.431
Mean	84.42	83.67	83.45	83.22		83.41	83.48	
Standard deviation	2.89	3.18	3.44	3.33		1.76	1.78	

environmental factors that acted through the same way for both groups and it caused minor effects in spite of the control of the researcher (Table 1).

In the intervention group 63.34 percent of the members had diastolic blood pressure of 80-84 mmHg before the intervention, but after the end of the third stage it increased to 76.66 percent. Moreover 36.66 percent of members had diastolic blood pressure higher than 85mmHg before the intervention but after the third stage of intervention it decreased to 23.34 percent. Therefore, the mean and standard deviation of diastolic blood pressure in the intervention group was 84.42±2.89 before the intervention and 83.22±3.33 after the end of the third stage of the intervention, the difference between the mean before and after the intervention was statistically significant (P=0.001, P<0.001). In the control group 80 percent of the participants had a diastolic blood pressure of 80-84 mmHg before the intervention and they remained 80 percent after the end of the 10th day; and 20 percent of the members had a diastolic blood pressure higher than 85mmHg which stayed 20 percent after the end of the 10th. Therefore the mean and standard deviation of diastolic blood pressure in the control group was 83.44 1.46 before the time of the intervention and it was 83.48 1.76 before the time of the intervention and 83.48 1.78 after the end of the 10th day (Table 2).

The result of the independent t-test on systolic blood pressure showed a significant sta-tistical difference in the intervention and the control groups after the intervention (P=0.002, P<0.05). Furthermore the result of the test on diastolic blood pressure showed a significant statistical difference in the intervention and control groups after the intervention (P=0.000, P<0.001).

Discussion

The findings showed that prayer affects systolic and diastolic blood pressure. These findings are the same as the results of the previous research in this field [14]. The study by Muller showed that people who attended church continuously (once a week or more) and prayed, had 1-4 mmHg decrease in their systolic and diastolic blood pressures in comparison to people who attended the church, irregularly [15]. The results of the research by Bernardy and his colleagues showed that Rosary prayer and Yogamantran decreases the number of breaths (about 6 breathes in a minute), intervals of breath taking, systolic and diastolic blood pressure and improves autonomic cardiovascular rates [16]. It seems that using complementary medicine as a non-medicational method with no side effects can be useful in pre-hypertensive people.

The results of this research present valuable and useful information for the use of non-medicational methods (such as prayer therapy) in the field of medical science courses so encouraging the use of these methods can be effective in serving the spiritual and physical health of the people. Encouraging health and

treatment personnel to accept the point that beliefs derived from spiritual issues have very special importance in the help seekers' lives as they can affect their health and related care behaviors.

Some people can tolerate severe pains and physical problems because of their beliefs of a spiritual power and their family have also tried to continuously improve their patients because they believed that their struggles will have positive and hopeful results. Since, prevention is preferred to treatment; we can not summarize the skills of the medical and sub-medical personnel to the medication and care treatment framework. Non -medicational treatments suggest different solutions which have no expense and side effects of medica-tion [17]. To develop these findings and get more information on this topic, it is suggested that other researches would be done on the effects of prayer on blood pressure of women and men. Moreover, a research should be done to compare the effects of prayer on blood pressure of women and men. Researches with repeated interventions of chronological in-tervals longer than ten days should be done in other provinces of the country.

Acknowledgment

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