Relationship between Aspects of the Social Support Provided by the Spouse and the Blood Pressure in Hypertension Patients Who Referred to Healthcare Centers in Qom, Iran

Amin Arabshahi1, Abolfazl Mohammadbeigi2, Zabihollah Gharlipour3, Taher Oroji1, Siamak Mohebi4*

1 Student Research Committee, Department of Health Education and Promotion, Faculty of Health, Qom University of Medical Sciences, Qom, Iran
2 Neuroscience Research Center, Department of Epidemiology and Biostatistics, Faculty of Health, Qom University of Medical Sciences, Qom, Iran
3 Department of Public Health, Faculty of Health, Qom University of Medical Sciences, Qom, Iran
4 Department of Health Education and Promotion, Faculty of Health, Qom University of Medical Sciences, Qom, Iran

* Corresponding author: Siamak Mohebi, Department of Health Education and Promotion, Faculty of Health, Qom University of Medical Sciences, Qom, Iran. Tel: 09183304297; Email: mohebisiamak@yahoo.com

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ABSTRACT

Background and Aim: Hypertension is one of the most important risk factors for cardiovascular disease and stroke. Social support is one of the effective factors in the prevention and control of this disease. Therefore, this study aimed to determine the relationship between the aspects of social support received from the spouse and high blood pressure in patients who referred to healthcare centers in Qom, Iran.

Materials and Methods: This cross-sectional study was performed on 280 patients with primary hypertension referred to healthcare centers in Qom. Data collection tools were demographic form, social support survey by Sherburne and Stuart, a checklist for checking and recording systolic and diastolic blood pressure, and a standard sphygmomanometer. The data were analyzed in SPSS software (version 20) using independent t-test, one-way ANOVA, Pearson correlation coefficient, and multivariate linear regression tests.

Results: According to the results, the social support received from the spouse was good in 82.9% of the patients, while 9.3% and 7.9% of the patients received moderate and low social support from their spouses, respectively. In addition, the results showed that the systolic (P=0.01) and diastolic blood pressures (P=0.003) had a significant relationship with the social support received from the spouse. Moreover, the findings revealed that occupation (P<0.001), gender (P<0.001), and income (P=0.019) had a significant correlation with the received social support (P<0.05).

Conclusion: The results of this study indicated that social support received from the spouse should be considered as an influential component on systolic and diastolic blood pressure in hypertension patients.

How to cite this paper

Introduction

Hypertension is a major public health problem all over the world and has a global mortality rate of 13%. According to previous studies, this disease has a relatively high prevalence rate worldwide and Iran is no exception (1). Hypertension is known as “the silent killer” due to its lack of obvious symptoms (2, 3). Genetic factors (e.g., family history), environmental factors (e.g., salt intake, obesity, and alcohol consumption), psychological factors (e.g., personality, coping style, self-esteem,
repressed anger, and personality type), and social factors (e.g., occupation, income, marital status, loneliness, and social isolation) play important roles in creating high blood pressure (4). Hypertension is associated with other problems, such as heart attack, stroke, congestive heart failure, peripheral vascular disease, and coronary heart disease (5). Higher blood pressure increases the chance of having a heart attack, stroke, and kidney disease (6).

Based on previous studies, approximately 25% of adults around the world suffer from high blood pressure, and this rate increases with age (7). According to the American College of Physicians, lowering blood pressure by at least 3 mm Hg can prevent cardiovascular diseases, stroke, and other causes of death (8). Currently, out of the 400,000 deaths that annually occur in Iran, 81,000 cases are due to hypertension and stroke (9). The results of the latest national survey on risk factors of non-communicable diseases in 2016 indicated that the prevalence rate of hypertension in Iran was 27% (10). Hypertension is influenced by all important life events which can, in turn, affect the quality of life of the patients. Besides medication, hypertension treatments should pay close attention to the role of psychological and sociological factors in order to be successful (11).

Social support can be a shield against the negative outcomes of this disease and affects adaptation indicators through physiological, emotional, and cognitive characteristics (12). Social support reduces cardiovascular diseases (13), hypertension, nervous headaches, and gastrointestinal disorders (14). Moreover, it boosts self-esteem, reduces the negative effects of chronic illnesses, and helps the patients to adapt to their illness (14). The seventh joint national committee on prevention, detection, evaluation, and treatment of high blood pressure emphasizes the involvement of family members in caring for the hypertension patients, highlighting that social support can play an important role in the control of this disease (15). Social support which is provided by others can be obtained from a variety of sources such as family, spouse, and friends (16).

One of the components of social support is the support received from the spouse which is superior to the support provided by the other members of society and the family. Based on health promotion strategies, family, especially the spouse, plays a crucial role in the process of disease prevention and treatment (17). Family is the most basic element of society and is responsible for the provision of proper healthcare for patients and those around them, and the most important element in this regard is the spouse (17). According to previous studies, health-promoting behaviors are more common among people who are in daily contact with their spouse (18). Such behaviors are mostly performed through direct social control, such as reminders, encouragement, observation, or even threats. However, few studies have been performed on the valuable role of the family of patients, especially spouses (18).

Therefore, considering the important role of social support in the control and prevention of hypertension, the present study aimed to investigate this role. For this purpose, this paper will focus on the relationship of the various aspects of social support provided by the spouse with high blood pressure in patients who referred to healthcare centers in Qom, Iran.

Materials and Methods

This cross-sectional (descriptive-analytical) study was performed on people with primary hypertension during 9 months (early spring to late autumn) in Qom in 2019. The statistical population in this study was hypertension patients who referred to healthcare centers in Qom. The healthcare centers were selected using the simple random sampling method from three different areas (uptown, midtown, and downtown). Moreover, the participants were selected using the convenience sampling method from the eligible patients. The sample size was calculated according to the sample size formula and based on a study conducted by Taher et al., considering r=0.18, and type one and two errors 5% and 20%, respectively (19). Finally, the sample size was estimated at 280 cases who were included in the study using the convenience sampling method.

The inclusion criteria consisted of 1) age range of 30-65 years, 2) ≥1 year of history of primary hypertension, 3) uncontrolled primary hypertension (confirmed by a doctor), 4) minimum use of medications to control blood pressure, and 4) medical record in healthcare centers. On the other hand, the exclusion criteria were unwillingness to continue cooperation and hypertension caused by other diseases (secondary hypertension).

The required data were collected through a demographic form, the social support survey by Sherbourne and Stewart (1991) (MOS-SSS), a checklist for the examination and record of systolic and diastolic blood pressure, and the HS20A standard Brisk sphygmomanometer. The demographic form included age, gender, level of education, income, and occupation. To measure social support, MOS-SSS was used which was developed in 1991 by Sherbourne and Stewart (20). This test measures the social support received by
the subject and is comprised of 19 phrases and 5 subscales.

The emotional/informational support section includes items 1-8 that assess guidance, information, positive emotion, empathy, and encouragement to express emotions. The tangible support section includes items 9-12 and measures tangible and behavioral support. The affectionate section includes items 13-15 and evaluates the expression of love and affection. The positive social interaction section deals with recreational activities and includes items 18-16, and the last item is an extra item. This questionnaire was scored based on a 5-point Likert scale from 1 (never) to 5 (always) and it determines the agreement or disagreement of the subject with the statements.

The minimum and maximum possible total scores were 19 and 95, respectively. The total score ranges of 19-38, 38-57, and >57 indicated low, moderate, and high levels of family support. High scores on this scale showed that the subject received the desired support of the family. The reliability of this test was calculated at 0.7-0.93 using Cronbach's alpha coefficient. Moreover, Tamannaeifar and Mansourinik confirmed the formal and content validity of this tool by using the opinions of psychological experts and estimated its reliability at 0.97 using Cronbach's alpha coefficient (21).

To measure the blood pressure of the subjects, they were first rested for 10 minutes. Then their blood pressure was measured twice with an HS20A standard Brisk sphygmomanometer from the right hand in a seated position with a 5-minute interval. The mean of the obtained blood pressures was recorded as the systolic and diastolic blood pressure. The data were finally collected and analyzed using descriptive statistics (mean and standard deviation) in SPSS software (version 20). Regarding the analytical statistics, independent t-tests, one-way analysis of variance, and Pearson correlation coefficient and multivariate linear regression were used. A p-value of less than 0.05 thereby within the range of 19-95.

According to the results, 73.2% (n=205) and 26.8% (n=75) of the subjects were male and female, respectively. Moreover, the mean age of the participants was 53.56±8.75 years while the mean duration of hypertension in them was 6.07±5.01 years. In addition, the level of education of the majority of the patients (64.6%, n=181) was elementary school. Furthermore, based on the findings, 7.9% (n=22), 9.3% (n=26), and 82.9% (n=232) received poor, moderate, and good social support, respectively. The mean±standard deviation of social support (total score) was 77.31±20.81, and thereby within the range of 19-95. Besides, the mean and standard deviation of systolic (12.38±1.69) and diastolic (8.03±1.2) blood pressures were within the range of 8-19 and 5-12, respectively (Table 1).

The independent t-test revealed that there was a significant relationship between gender and social support (total score) (P<0.001) and that male subjects received more social support, compared to female subjects. However, the study findings

### Table 1. Mean and standard deviations of the components of social support and systolic and diastolic blood pressures

<table>
<thead>
<tr>
<th>Components</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
<th>Range of scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional/informational support</td>
<td>8</td>
<td>40</td>
<td>31.7</td>
<td>9.35</td>
<td>8-40</td>
</tr>
<tr>
<td>Tangible support</td>
<td>4</td>
<td>20</td>
<td>17.1</td>
<td>4.39</td>
<td>4-20</td>
</tr>
<tr>
<td>Positive social interaction support</td>
<td>3</td>
<td>15</td>
<td>12.1</td>
<td>3.7</td>
<td>3-15</td>
</tr>
<tr>
<td>Affectionate support</td>
<td>3</td>
<td>15</td>
<td>12.14</td>
<td>3.7</td>
<td>3-15</td>
</tr>
<tr>
<td>Social support (total)</td>
<td>19</td>
<td>95</td>
<td>77.3</td>
<td>20.81</td>
<td>19-95</td>
</tr>
<tr>
<td>Systolic blood pressure</td>
<td>8</td>
<td>19</td>
<td>12.38</td>
<td>1.69</td>
<td>-</td>
</tr>
<tr>
<td>Diastolic blood pressure</td>
<td>5</td>
<td>12</td>
<td>8.03</td>
<td>1.2</td>
<td>-</td>
</tr>
</tbody>
</table>
showed that demographic variables had no significant relationship with systolic and diastolic blood pressure in participants (P>0.05) (Table 2).

Regarding the relationship of demographic variables with social support and systolic and diastolic blood pressures, the Pearson correlation coefficient showed that age had no significant relationship with social support (total score) (P=0.166, r=0.083), systolic blood pressure (P=0.224, r=0.073), and diastolic blood pressure (P=0.850, r=0.011). Moreover, this test revealed no significant relationship between the duration of the disease and the received social support (total score) (P=0.277, r=0.065), systolic blood pressure (P=0.056, r=0.039), diastolic blood pressure (P=0.114, r=0.056). However, it showed that there was a significant relationship between the components of social support (total score) with the mean systolic (P=0.01) and diastolic blood pressures (P=0.003) (Table 3).

The results of the regression analysis showed that with the increase of age, the social support score decreases and those who had an occupation obtained a higher social support score. Furthermore, income and education variables did not affect the social support scores (Table 4).

### Discussion

High blood pressure is a chronic disease that influences all important life events of the patients which can, in turn, affect their quality of life. Social support is associated with disease and health and has protective effects on one's physical health (22). Based on the results of previous studies, social support can shorten the length of the hospital stay, lead to better adaptation to the treatment, and reduce the risk of death in patients with chronic diseases (23). According to the results of a study performed by Taher et al., social support is able to affect the health of hypertension patients (24).

According to the findings of the present study, more than two-thirds of the participants received good social support. While in a study carried out by Omidi et al., (25) only 37.5% of patients received good social support. This inconsistency could be due to the differences in the culture and level of social welfare of the study populations as well as...
the data collection tools. Furthermore, in the present study, it was found that social support does not have a significant relationship with age, which is consistent with the results of a study performed by Taher et al. (24) and inconsistent with the results of the study conducted by Omidi et al. (25). In the study performed by Omidi et al., social support had a statistically negative relationship with age.

The results of the present study indicated that the social support received from the spouse had a significant relationship with the variables of occupation, gender, and income level. In addition, it was found that males, clerks, and those with higher income levels obtained a higher mean score regarding the social support received by the spouse. It seems that people with higher income levels receive more social support due to their financial status which provides them with more interactions and communications. Moreover, another reason could be the lack of financial problems in the family environment of such patients. These results are in line with the findings of the study performed by Taher et al. (19, 24). In another research conducted by Heydari et al., it was found that men received more family support, which is consistent with the results of this study. Graham also argues that women are generally the caregivers at home and thereby the intermediates between the family and the formal healthcare system of the society (26).

The results of this study are also consistent with those of a study performed by Izadi Rad et al. (38) and Omidi et al. (25) who emphasized the involvement of family members and social support in the control of systolic and diastolic blood pressures. Omidi et al. (25) in their study revealed that social support had a statistically negative relationship with systolic and diastolic blood pressure, which is consistent with the results of this study.

Moreover, Araújo et al. in their research showed that there was a significant relationship between high blood pressure and the four aspects of social support (tangible, affectionate, positive social interaction, and informational) which is in line with the results of our study (39). Due to the fact that a major part of the care of these patients is provided for them at home, the family, especially the spouse, has a crucial role in the adaptation of these patients to their disease. Presence of a spouse as someone who increases one’s sense of solidarity and belonging can affect one’s health and performance, as well as the quality and perception of social support. It seems that the good social support received from the spouse has been able to control the blood pressure of the patients during prehypertension. The reason is that social support increases the self-esteem of the patients and makes them better adhere to self-care behaviors and follow their treatment procedure.

One of the limitations of this study was that it was performed on hypertension patients who referred to healthcare centers and were selected using non-probability and convenience sampling methods that can affect the results of this study. Therefore, the patients who did not go to community health centers were excluded from the study. Moreover, despite the fact that the subjects suffered from hypertension, their mean blood pressure was not high. It can be concluded that perhaps the results of the study cannot be generalized to all hypertension patients.

Moreover, in this study, only the social support provided by the spouse was examined and other factors affecting the social support by other family members or other social networks were not investigated. Furthermore, most of the participants of this study were male which can affect the results of the study as well. It is suggested that similar studies be performed in medical locations, such as hospitals and other clinics while the social support of other family members and the community be also considered using random methods. However, one of the strengths of the study was the sufficiency of the sample size.

Conclusion
The results of this study suggest that the social
support received from the spouse should be considered as a component affecting the level of systolic and diastolic blood pressures in hypertension patients. It is recommended to plan related interventions regarding the importance of social support and self-care behaviors for patients and their family members.

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Conflicts of interest
The authors declare that there was no conflict of interest in the present study.

References


