

Analytical Assessment of Belief about Medicine among Patients with Hypertension: A Case Study on Patients Referred to Medical Centers

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Abstract

Introduction and Objective: Hypertension (HTN) is one of the major health problems in many countries. Medicinal treatments and lifestyle modification have so far failed to effectively influence blood pressure control. Hence, this study intended to analytically assess the belief about medicine among hypertensive patients who referred to medical centers during 2015.

Materials and Methods: This was a descriptive-analytical, cross-sectional study. The population consisted of all patients who referred to health centers and doctors' offices for internal medicine and heart diseases. The sample included a total of 400 hypertensive patients who were selected through convenience method sampling and purposeful. Data were collected through a questionnaire related to belief about medicine for hypertensive patients. The findings were analyzed through the Mann-Whitney U test and Kruskal-Wallis test through SPSS version 21.0

Findings: Based on the results, more than half of the subjects believed that the medicines are generally addictive and harmful, and should be taken regularly while the natural and herbal remedies are safer. Furthermore, the majority of patients believed that doctors, who have too much confidence in the medicines, tend to over-prescribe. In fact, there was a significant relationship between certain demographic characteristics of the hypertensive patients and belief about medicines.

Conclusions: Overall, the results suggested there is belief about medicine among seniors unlike most other populations. This can provide an opportunity for nurses, health care administrators, etc. to take improvement measures in the treatment of hypertensive patients.

Keywords: hypertension, belief about medicine

1. Introduction

Illness and health are two words traced back to the history of human creation. In this regard, it appears that humans have focused more on illness rather than health, since the use of medicines in various forms has been widely recognized as a way of combating the diseases (Pirzada & Sharifirad, 2011).

One of the most common diseases and the most important risk factor for cardiovascular diseases (CVD), stroke, blindness and damage to the extremities is HTN or high blood pressure. This deadly disease affects patient's sexual performance, career, social roles and many other aspects of life such as ability to maintain family life, thus leaving numerous adverse changes (Morisky et al., 2008). The number of people with HTN escalated from 600 million in 1980 to one billion in 2008, when nearly 40% of adults over 25 years of age were diagnosed with the disease worldwide (WHO, 2013). Moreover, this condition is known as a major cause of disability accounting for about 11% of all deaths in the world (Sukhak et al., 2014). HTN is the most common cause of strokes and kidney failure. In the absence of appropriate treatment and control of HTN, 50% of hypertensive patients will die from coronary artery disease (CAD), 33% from stroke and 10-15% from renal failure (RF)

(Kamran et al., 2014).

Hence, the motto of World Health Day 2013 “Let’s take blood pressure seriously.” reflects the global significance of HTN. According to the latest statistics provided by the Iranian Ministry of Health, one out of five Iranians suffers of HTN. Furthermore, over 50% of patients are not diagnosed with HTN. Among the known cases of HTN only half are being treated (Rakhshani, 2012).

Although HTN has specific symptoms, it sometimes called a *silent killer*, because patients are often asymptomatic (Brunner et al., 2010). The symptoms usually prompting the patients to scramble include morning headaches in the occipital area as the most commonly reported symptom. There are other symptoms including blurred vision, spontaneous bleeding from the nose, fatigue, anxiety, lethargy, chest pain or palpitations. The classic symptoms of HTN were used to be considered in the past, including headaches, nosebleeds and dizziness. However, the usefulness of these symptoms is questionable for current diagnoses. Recent studies have shown that the symptoms among patients with HTN are not as common as among the general population. Other symptoms including hot flashes, sweating and blurred vision are more common in patients with hypertension (Timby, 2009).

The goal of treating HTN is to prevent complications and deaths through curtailing the arterial blood pressure and maintaining it within the normal range. According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7), hypertension treatment in older adults serves to change lifestyles and maintain arterial pressure in an amount of less than 140.90 mmHg and in young adults less than 135.85 mmHg (Chupanian et al., 2003).

Lifestyle modification techniques can more effectively reduce blood pressure. The noteworthy point is that changes in lifestyle or habits may prevent the onset of HTN. Some studies on mild HTN suggest that using a combination of lifestyle modifications can curtail blood pressure, leading to less need for blood pressure-lowering medicines for controlling blood pressure (Kaplan, 2010).

A study examined 975 men and women 60-80 years old who were treated with a blood pressure lowering medicine. The study entailed four groups. The subjects were divided randomly into first and second groups under treatment with sodium intake restriction and weight loss. The third group received both interventions while the control group received no intervention. After three months, no medicine was administered. After thirty months, the results showed that only 16% of subjects in the control group had blood pressure within normal ranges without taking any blood pressure-lowering medicines. Nonetheless, this figure was 35% in the first two groups and 43.6% in the third group (Kaplan, 2010).

In fact, medicinal therapy is crucial for patients with chronic HTN with blood pressure greater than 140.90 who have not improved after 3-6 months of non-drug treatments. In other words, if a person’s blood pressure remains higher than 140.90 mmHg despite a six-month period of lifestyle/habits change, medicinal treatment should be initiated (Brunner et al., 2010).

One of the major concerns of patients with HTN medications is how to adhere to the medicinal programs. One of the biggest failures in the treatment of hypertension is the denial of treatment regimens especially on the part of clients. In fact, the acceptance of medicinal regimen in these patients has been estimated to be 40-60%. An overview of the relevant literature review revealed that at least 25 to 50% of patients with chronic diseases sometimes do not follow their treatment programs. In a study conducted in 2009, Banning estimated that medication adherence and belief among hypertensive patients ranged from 26 to 59%. According to the World Health Organization (WHO) report, more than half of the patients treated for hypertension leave the treatment during the first year of diagnosis, and the other half continuing their treatment will use only 80% of their prescribed medicines. Hence, nearly 75% of hypertensive patients are not well controlled due to failure in adhering to therapy regimen and poor belief about medicines (Sabaté, 2003).

A study was conducted on the outpatient group (non-hospitalized) at the Department of Kempe Gowda Institute of Medical Sciences and Research Centre, Bangalore, India. The participants were 608 patients, 49.67% did not adhere to medication. The ideological barrier was reported among 39.14% of patients. The access barrier and recall barrier were reported to be 82.57% and 62.17%, respectively. Moreover, 78.62% of the patients could not afford medicine and 54.93% found it difficult to renew the prescriptions timely. The result was that approximately half of the Indian patients under study did not adhere to their blood pressure medication regimen (Dennis et al., 2011).

Thus, denial of medical treatment from patients and unpleasant side effects of treatment are among the underlying issues raised among this category of patients. A study in Germany had attempted to identify the

reasons for non-adherence to medication regimen in patients. Its findings demonstrated that one-third of patients do not stick to medicine. It was noted that 30% to 50% of patients do not follow their medication regimen. The main reason for the ineffectiveness of programs to track medication adherence was lack of knowledge of proper reasons for non-adherence (Wilke et al., 2011). Moreover, Salim et al. (2012) conducted a qualitative study titled "compliance and attitude towards medicines among patients with hypertension in Pakistan". The aim of this study was to explore the perceptions and experiences of patients with HTN concerning medication use and adherence. The focus was on the extent to which patients believed in medicines and adhered to them.

Julius et al. (2013) examined patients with HTN to explain the perception and views through three themes including knowledge of HTN, blood pressure control in relation to the daily routine; and the patient's personal feelings and beliefs about well-being. They found that knowledge by itself is not effective in adherence, even though it might be effective in cases where knowledge is related to patient-related factors such as personal beliefs. The absence of a regular program specifically for medication is the main obstacle reported against HTN control. The study also showed that patients' beliefs and feelings about well-being could be effective in adherence to medical advice about daily medications and lifestyle changes. In fact, some people believing that HTN causes physical harms do not resort to medical measures so long as they feel well. Unlike many studies about adherence to medication therapy and belief about medicines, this issue has remained unsolved for the past four decades (Jia-Rong et al., 2008).

Medication adherence regimens depend on the importance attributed by the patients to their prescription medicines and belief about medicine. For instance, medicines that relieve painful symptoms and bring about perceived effectiveness are more likely to be taken (Cinar et al., 2009). Therefore, the daily behavior of people is influenced by their beliefs. Individual behaviors can to a certain extent be justified by understanding their beliefs. Health beliefs involve the individual conviction about health and morbidity (Browne & Merighi, 2010; Ross et al., 2004). The results of several studies in the eastern provinces of South Africa during 2000-1997 have cleared that the prevalence of HTN was by up to 15% among the rural adult population influenced by patient's belief about medicine and adherence to medicine. Such beliefs have been internalized through an interaction of multiple factors such as personality, culture, socio-economic features and knowledge of medical condition, making it difficult to change the cultural norms and socio-economic characteristics of patients. One effective strategy in the positive beliefs about medicines is to promote the patients' knowledge about their diseases and how to treat them through education. Patients' beliefs form based on previous experience in crisis situation. Patients often expect that the use of medicines should improve their well-being. When the symptoms go away, there is no need to use medicines anymore, although chronic conditions require medication and changes in lifestyle for the rest of life. In this study, those who believed that they feel ill without blood pressure medicines were 73% while 88.9% had this feeling after intervention. These results suggested that educational interventions can enhance the level of knowledge of participants about HTN, leaving a positive impact on their beliefs about the medicines (Magadza et al., 2009).

In this filed, Alhewiti (2014) conducted a study to evaluate the association between medication adherence and beliefs about medicines in patients with chronic disease (HTN, diabetes, hyperlipidemia, hyperthyroidism and asthma). The results have indicated that 56.9% of patients had poor adherence to medicines. Moreover, there was a positive correlation between medication adherence and individual beliefs about the importance of medicines. There was also a negative association between medication adherence and individual concerns about side effects, beliefs about the harmfulness of medicines and over-prescription. Hence, the prevalence of non-adherence to medication regimen was directly correlated with negative individual beliefs about medicines (Alhewiti, 2014). Reviews of Literatures have demonstrated that very few research studies on belief about medicines in hypertensive patients have been conducted in Iran. Concerning the medication regimen, there is insufficient data obtained on the patient's beliefs about HTN medicines. Awareness of General practitioners(GPs) about the statistics of people with HTN and the level of belief in the medication regimen can not only help upgrade services and modify patient's behavior and medication reception but also curtail the consequent mortality and disability rates. According to the facts mentioned above, this study intended to analytically assess the belief about medicine among hypertensive patients who referred to medical centers during 2015.

2. Materials and Methods

This was a descriptive-analytical, cross-sectional research, where the samples were selected through convenience sampling method and purposeful according to the inclusion criteria and informed willingness of 400 subjects to participate in the study. The inclusion criteria were age over 18 years, taking at least one anti-hypertension medication, essential hypertension risk according to specialist diagnosis and willingness to participate in the survey. The population comprises all health centers and clinics of internal and heart diseases during 2015, which

were selected owing to ease of access. For ethical considerations, the researcher offered an endorsement letter from the Faculty of Nursing, Kerman University of Medical Sciences to the selected therapeutic centers, having obtained permission from the relevant authorities, this study firstly aimed to provide the population with an explanation to voluntary participation in the survey. The clients were allowed to leaving at any stage of research survey. Concentration was on local and regional culture so as to curtail stress and enhance cooperation such as creating a private location for filling out the questionnaires. In addition, they were assured that data will remain confidential and the results will be handed to medical educational centers.

Data collection instrument was a questionnaire consisting of two parts: 1) Demographic characteristics, 2) Belief about Medicine Questionnaire (BMQ) were designed by Horn et al. in 1999. Questionnaire items were derived from a review of published studies and based on interviews with patients. The questionnaire consisted of two sections dedicated to BMQ-Specific and BMQ-General. The Specific section involved an evaluation of beliefs about medicines prescribed on an individual basis, which was composed of two 5-item sub-scales. The first 5 questions concern the assessment of individual beliefs about the need for medication labeled Specific-Necessity. The second 5 questions concerned the assessment of individual concerns about side effects including the risk of becoming drug dependent, toxicity associated with long-term use of medicines and interfering side effects, labeled Specific-Concern. All items were scored on a five-point Likert scale, ranging from strongly agree (5), agree (4), no idea (5), disagree (2) and strongly disagree (1). The range of scores covered 5 to 25. Moreover, 15 were considered to be the middle score in this subscale (Horne et al., 1999).

Obtaining a higher score implied there was stronger belief about the concepts presented in the corresponding subscale. Necessity-Concern differential was obtained through subtraction of the concern from the score of necessity score, ranging from -20 to 20. Any score higher than the subtraction indicated higher perceived necessity or lower concern about medicines. Given the middle score of necessity and concern subscales, subjects were divided into four categories in terms of their attitudes toward medicines: 1) skeptical (low necessity, high concern), 2) indifferent (low necessity, low concern), 3) ambivalent (high necessity, high concern), and 4) accepting (high necessity, low concern). Moreover, the general section of the questionnaire assessed the opinions and beliefs about medicines containing two 3- and 5-item subscales. The first 5 items are relates to assessment of individual beliefs about harmfulness, addictive and toxic medicines that should be taken regularly, labeled General-Harm. The second 3 items were relates to assessment of individual beliefs about the medications widely prescribed by doctors, labeled General-Overused. All items were scored on a five-point Likert scale, ranging from strongly agree (5), agree (4), no idea (5), disagree (2) and strongly disagree (1). Scores of General-harm subscale ranged from 4 to 25 and general-overused sub ranged from 4 to 15. Achieving a higher score indicated a more negative opinion towards medicines in general (Horn et al., 1999; Menckeberg et al., 2008).

The content validity of the questionnaire was confirmed by ten members of the Faculty Members in School of Nursing. In order to verify the reliability (internal consistency and repeatability), questionnaires were handed to 30 hypertensive patients. After two weeks, the patient made another presence in the clinic or it was delivered to their home in person. The Cronbach's alpha of the BMQ was 0.7. The questionnaires therefore had adequate reliability. Data were analyzed through SPSS 21.0.

3. Findings

In this study, the findings showed that 80.2% of patients were over 30 years of age and more than half of the subjects (56.3%) were men. The majority of participants were married (75.2%). Moreover, 32.5% of the subjects were illiterate, and only 12% were unemployed. More than half of the subjects lived in urban areas (53.5%). In terms of family size, household population was between 4 and 7 in most of the subjects (60.8%) living mainly at home with 3-4 rooms (63.3%) and an area of 50 to 150 meters (59.8%). In terms of ethnicity, nearly 50% of patients were Baluoch and more than 90% were Iranian nationals. Sunnis made up the majority of participants (64%). Regarding the characteristics of the disease, more than 95% of subjects had a history of HTN for less than 15 years while most of them had less than ten years, taking anti-HTN medicines (98.4%). Less than 25% of the subjects were taking HTN medication three times a day (22.6%). Furthermore, less than 45% of subjects had HTN accompanied by other diseases such as diabetes, kidney failure, respiratory, hematologic, and gastrointestinal and nervous system deficiencies. Table 1 displays the frequency and frequency percentage of belief about medicine items among hypertensive patients.

Table 1. Responses given by hypertensive patients to the belief about medicine items

No.	Items	Response (Frequency/Percentage)				
		Completely disagree	Disagree	Not sure	Agree	Completely agree
1	My health status is currently dependent on blood pressure medications.	1 (0.3)	40 (10)	67 (16.7)	204 (51)	88 (22)
2	Life is impossible without blood pressure medication.	18 (4.5)	129 (32.2)	83 (20.8)	154 (38.5)	16 (4)
3	I will feel very bad without blood pressure medication.	19 (4.7)	51 (12.7)	76 (19)	189 (47.3)	65 (16.3)
4	My health status in the future will depend on blood pressure medication.	19 (4.8)	26 (6.4)	91 (22.8)	176 (44)	88 (22)
5	Blood pressure medicines will protect me from getting worse.	1 (0.3)	57 (14.3)	44 (11)	236 (59)	62 (15.4)
6	Taking hypertension medications worries me.	-	129 (32.3)	78 (19.4)	164 (41)	29 (7.3)
7	Sometimes I worry about the long-term effects of blood pressure medicines.	14 (3.5)	66 (16.5)	84 (21)	198 (49.5)	38 (9.5)
8	Hypertension medicines feel like a complicated issue to me.	17 (4.3)	67 (16.7)	79 (19.7)	193 (48.3)	44 (11)
9	Blood pressure medications have disrupted my life.	6 (1.5)	122 (30.5)	131 (32.7)	113 (28.3)	28 (7)
10	Sometimes I'm worried about being too dependent on hypertension medication.	1 (0.3)	66 (16.5)	58 (14.5)	184 (46)	91 (22.7)
11	Most medicines are addictive.	-	88 (22)	71 (17.7)	181 (45.3)	60 (15)
12	People who are under medical treatment should cease the treatment for a while and then resume the treatment.	13 (3.3)	58 (14.5)	112 (28)	175 (43.7)	42 (10.5)
13	Medicines are more harmful than helpful.	4 (1)	95 (23.8)	95 (23.8)	194 (48.4)	12 (3)
14	All medicines are poisons.	39 (9.7)	101 (25.3)	158 (39.5)	70 (17.5)	32 (8)
15	Naturopathy (herbal) medicines are safer.	5 (1.3)	71 (17.7)	105 (26.3)	181 (45.3)	38 (9.5)
16	Doctors over-prescribe medicines.	7 (1.7)	46 (11.5)	90 (22.5)	169 (42.3)	88 (22)
17	Doctors seem over-reliant on medication.	13 (3.3)	23 (5.7)	76 (19)	236 (59)	52 (13)
18	If doctors spend more time with patients in visits, they will prescribe fewer medicines.	7 (1.7)	18 (4.4)	103 (25.8)	147 (36.8)	125 (31.3)

According to the table above, regarding the necessity of taking HTN medicines, the majority of patients agreed and strongly agreed with items "My current health status is dependent on blood pressure medication." and "Blood pressure medicines will protect me from getting worse." Moreover in the items for concern about taking HTN medicines, the majority of patients agreed and strongly agreed with "I'm worried sometimes to be too dependent on HTN medication." More than half of the subjects believed that the medicines are generally addictive and harmful, and should be taken regularly, since the natural and herbal remedies are safer. The majority of participants believed that doctors rely too much on medicines and often over-prescribe. Table 2 shows the relationship between demographic characteristics and belief about medicine.

Table 2. Relationship between demographic characteristics and belief about medicines in patients with HTN

Variable	Beliefs about medicines-necessity		Test statistic*	P-value	Beliefs about medicines-concern		Test statistic*	P-value
	Mean	Standard deviation			Mean	Standard deviation		
Age (year)	17.06	4.30			17.61	4.11		
18-29								
30-39	18.49	3.76			16.90	3.14		
40-49	17.96	2.67	7.34	0.2	15.25	2.98	39.97	p<(0.001)
50-59	17.79	3.20			17.26	3.04		
60-69	18.39	2.98			17.39	2.18		
70 and above	17.91	1.15			14.91	2.72		
Male	17.28	3.55	-3.56	p<(0.001)	16.32	3.23	-3.80	p<(0.001)
Female	18.80	2.80			17.79	2.82		
Married	18.02	3.41	-0.35	0.72	17.20	3.08	-2.26	0.024
Single	17.71	3.06			16.26	3.22		
Education level								
Illiterate	18.91	2.69			16.67	3.02		
Elementary	17.95	3.48	24.41	p<(0.001)	16.51	2.94	20.71	p<(0.001)
High-school	17.34	4.34			16.94	4.09		
Academic	16.97	2.32			18.11	1.95		
Job								
House-wife	19.10	3.53			18.46	2.78		
Unemployed	16.33	5.31			15.69	4.82		
Worker	18.71	1.85			16.02	2.13		
Employee	18.34	1.06	30.30	p<(0.001)	14.74	2.50	55.82	p<(0.001)
Farmer	16.76	1.63			17.02	2.03		
Retired	17.88	3.74			17.40	2.93		
Unemployed	17.91	1.53			18.39	2.37		
Living place								
Urban	17.69	3.94			16.95	3.44		
Suburban	18.08	2.53	2.82	0.24	17.02	2.84	1.58	0.45
Rural	18.43	2.30			16.93	2.67		
Ethnicity								
Baluch	18.02	3.76			16.52	3.26		
Sistani	17.82	3.14	0.90	0.64	17.20	3.14	12.90	0.002
Non-native	18.04	1.82			17.96	3.25		
Duration of experiencing hypertension (year)								
0-5	17.81	3.32			17.19	3.18		
6-10	18.04	3.27	1.43	0.49	16.21	3.20	5.43	0.07
10 and above	19.04	3.46			16.89	2.04		
Duration of taking hypertension medicines (year)								
0-5	17.89	3.24			17.06	3.23		
6-10	18.17	3.66	0.96	0.62	16.70	2.85	2.97	0.23

Variable	Beliefs about medicines-necessity		Test statistic*	P-value	Beliefs about medicines-concern		Test statistic*	P-value
	Mean	Standard deviation			Mean	Standard deviation		
10 and above	17.83	3.43			15.67	1.63		
Frequency of taking hypertension medicines per day								
Once	17.58	3.66	0.71	0.70	17.11	3.55	4.42	0.11
Twice	17.98	3.27			16.72	2.87		
Trice	18.38	2.92			17.27	3.03		
History of other diseases								
No	17.24	3.62	-4.20	p<(0.001)	16.60	3.26	-1.77	0.08
Yes	18.84	2.67			17.42	2.92		

* The binary variables were analyzed through Mann-Whitney U test while the variables with multiple modes were analyzed through the Kruskal-Wallis test.

According to the table above, subjects older than 70 years were less concerned about medicines compared to other age groups. More women than men believe they need anti-hypertensive medication. Moreover, women were more worried about side effects than men. Married people were more concerned about the use and effects of HTN medicines singles. Patients with academic education had a lower belief in the necessity of medication and more concern about medicines than other groups.

4. Discussion and Conclusions

Based on the results obtained in relation to the overall goal of the present project, i.e. determining the level of medication adherence among patients with HTN in Zahedan, it was found that for the necessity of taking HTN medicines, the majority of patients agreed and strongly agreed with “My current health status is dependent on blood pressure medication.” and “blood pressure medicines will protect me from getting worse”. Moreover in the items for concern about taking HTN medicines, the majority of patients agreed and strongly agreed with “I’m worried sometimes to be too dependent on HTN medication.” More than half of the subjects believed that the medicines are generally addictive and harmful, and should be taken regularly, since the natural and herbal remedies are safer. The majority of participants believed that doctors rely too much on medicines and often over-prescribe.

In this study, it was found that the majority of subjects in Zahedan believe that they should necessarily take HTN medicines, even though they are concerned about the medicines, leaving them ambivalent mostly about the effects of medication. Only 26.4% of those surveyed believe that taking HTN medication was necessary without feeling worried about taking HTN medicines. This study demonstrated that an increase in belief about harmful medicines over-prescribed by doctors aggravated their concern about HTN medicines.

Ramström et al. (2006) examined beliefs about medication regimen among patients among medical professionals in Sweden. The findings showed that there is a statistically significant difference between patients and pharmacists about medicines and medication regimen, i.e. the relationship between patient’s beliefs about medication was strongly reverse to medical professionals. In this study, patients strongly believed that “medicines are harmful” and “doctors tend to over-prescribe”. Furthermore, 91% of medical specialists were opposed to the statement “herbal and natural medicines are less harmful than chemical medicines” while half of patients believed otherwise.

Another study on diabetic patients in New York in 2009 examined patients’ beliefs about medicines, complexity of medication regimen and medication adherence. The results showed that the patients were divided into four groups in terms of belief about medicine: ambivalent patients (6%), skeptical patients (34%), indifferent patients (5%) and accepting patients (55%). ambivalent patients considerably had lower adherence to medication regimen compared to other groups (skeptics, indifferent and receptive) (2009). This was inconsistent with the results of the current study (Mann et al., 2009).

A similar study by Neame and Hammond (2005) determined the level of belief about medicine and its impact on medication adherence in patients with rheumatoid arthritis. The results of the study showed that the majority of respondents (74.3%) agreed or strongly agreed that the arthritis medication was necessary for health. However, 47.4% were concerned about potential adverse consequences. The overall score of necessity was higher than the score of concern. Moreover, results of that research showed that there is no relationship between knowledge about the disease and belief about medicines (Neame & Hammond, 2005).

In a similar study, 37.82% of patients believed that medication does not work (is not effective) or even aggravates their health status (Dennis et al., 2011). It seems that education programs and interventional education programs for these groups is essential. Risk Management is an act to do and it must educate to community and public. Risk Management consisted of risk assessment (kind of risk, risk consequence, risk probability) (Arbabisarjou, 2012). Education may enhance the performance (Arbabisarjou et al., 2015; Nazemzadeh et al., 2013). Self-care education is emphasized because it leads in active role in treatment process and accepting responsibility for individual health (Rauf Mehrpour & Arbabisarjou, 2005). Social networks are used for behavior improvement, educational performance and other self-care education (Arbabisarjou et al., 2015).

Moreover, examination of the demographic characteristics and their correlation with belief about medicine showed that 80.2% of subjects were over 30 years of age and more than half of the subjects were male. The majority of participants were married (75.2%). Moreover, 32.5% of the subjects were illiterate, and only 12% were unemployed. The interesting point in the survey results is the lower prevalence of HTN among subjects under 40 years of age by about 30%. This reflects the growing risk of hyHTN. The data from the study by Dennis Thomas (2011) on global statistics showed that HTN in 2000 affected more than a quarter (24.4%) of the adult population. It is estimated this population will increase to about 60% by 2025. In a blood pressure meta-analysis study conducted in 2006, Haghdoost and Sadeghirad concluded that the level of blood pressure in Iran was higher than those in other countries, indicating the need for intervention projects. These conclusions suggested there were local variables contributing to the prevalence and control of HTN in Iran requiring further study (Haghdoost & Sadeghirad, 2006).

According to the results, 17% of housewives suffered from HTN, accounting for the highest percentage among other professions. The experience of researcher for living many years in this city proved that continuous presence at home, lack of entertainment centers in the city and the lack of regular outings could be key factors contributing to greater risk of hypertension among housewives. In a study conducted in Koohrang (Chaharmahal and Bakhtiari Province in Iran) during 2007, inactivity was raised as one of the major risk factors for HTN ($P < 0.05$) (Ahmadi et al., 2007).

Insufficient physical activity was shown to be an important risk factor in this research. Since women in this region are not getting enough exercise, it can be alarming for the increasing risk of HTN and other chronic diseases such as diabetes in this population. Hence, it is critical to raise awareness about make modifications in sedentary lifestyles.

According to this study, illiterate people were more likely to believe in medication than the educated people. Concerning education level, Dennis et al. conducted a study in 2011 in India, confirming those results where illiterate people were more likely to believe in medication than the educated people. Given that most illiterate patients are at older ages and are more concerned about the condition, they showed higher belief in medication despite their low education level (Dennis et al., 2011).

Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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