Review

The effect of knowledge about hypertension on the control of high blood pressure

CrossMark

Mahmut Kilic [a], Tuğba Uzunçakmak [b], Huseyin Ede [c,*]

[a] Public Health, Bozok University, Health School, the Department of Public Health Nursing, Yozgat, Turkey
[b] Public Health Nursing, Bozok University, Health School, the Department of Public Health Nursing, Yozgat, Turkey
[c] Bozok University, the Faculty of Medicine, Department of Cardiology, Yozgat, Turkey

ARTICLE INFO

ABSTRACT

Objective: The aim of this study was to search the effect of knowledge about hypertension and socio-demographic characteristics on controlling high blood pressure levels among patients diagnosed with hypertension.
Methods: This is a cross-sectional study. The study population was obtained from subjects diagnosed with hypertension and applied to primary health care centers in Yozgat province center, in 2013. The subjects with informed consent were enrolled into the study (n = 485). The data were collected via 15-item hypertension knowledge questionnaire and personal information survey prepared in accordance with the literature. The knowledge level was classified as follows: low (<8 points); moderate (8–11 points); adequate (≥12 points).
Results: Frequencies of low, moderate and high level of knowledge about hypertension were 31.3%, 62.1% and 6.6% respectively. The effects of other socio-demographic parameters on the knowledge level were not significant even after multivariate analysis. Knowledge level was positively related to ratio of subjects with blood pressure under control but not significant (p > 0.05).
Conclusion: Majority of the subjects had inadequate knowledge about hypertension, two third of the subjects did not imply significant life style modification for hypertension.

Contents

* Corresponding author. Tel.: +90 505 671 1104 (mobile), +90 354 2127060 (office); fax: +90 354 212 3739.
  E-mail addresses: mahmutkilic@yahoo.com (M. Kilic), u.cakmak@windowslive.com (T. Uzunçakmak), huseyinede@gmail.com (H. Ede).
  Peer review under responsibility of The Society of Cardiovascular Academy.

Introduction

High blood pressure (HBP) is a leading major risk factor for chronic diseases and deaths. The prevalence of patients with hypertension (HT) had reached from 600 million in 1980 to one billion in 2008.[1] The prevalence of HBP was approximately 40% among adults of 25 years and above in 2008. Approximately 7.5 million people (12.8% of all-cause deaths) die every year due to HBP.[2] It is estimated that HT is responsible for 45% of deaths due to heart diseases and 51% of deaths due to stroke. HBP consists of 3.7% of Disability Adjusted Life Years (DALY).[1] Even prehypertension (PreHT) increases mortality risk due to cardiovascular and stroke-related diseases.[3]

According to Turkey Burden of Disease Study (TBDS) 2004, the leading factor for DALY was found to be HBP among seven most frequent factors. It was estimated that the prompt control of this factor would prevent approximately one of every four (25.2%) deaths.[4] According to the data derived from Turkish Statistics Institute (TSI) 2013, 39.8% of all deaths stem from circulation-related disorders and 12.8% of these deaths were related to HT.[5] The prevalence of hypertension is 32.2% among males and 30.5% among females in developing countries while these values are 40.8% and 33.0% respectively in developed countries.[6] In our country HT prevalence is found to be 35.1% according to the results of SALTurk trial held in 2008, it was 31.3% according to TURDEP II trial held in 2010 and it was 30.3% according to Turkish Society of Hypertension and Kidney Diseases[7] made PatentT2 trial held in 2012.[7–9] It seems that increasing trend in HT prevalence is stopped in recent years in Turkey.

The ratio of taking BP under control among hypertensive patients is 28.7% in our country while it is 29.6% among males and 34% among females in developing countries and 33.2% among males and 38.4% among females in developed countries respectively.[6,7] Chronic Diseases and Risk Factors Survey (CDRFS) in Turkey 2011 revealed that 85% of patients with hypertension used medication and 72% of hypertensive patients under medication had blood pressure values within targeted levels.[10]

The studies held in Pakistan revealed that hypertensive patients had inadequate knowledge about HT and the frequency of patients with BP under control was higher among the patients with high level of knowledge about HT.[11,12] Similarly, the study held in USA also showed that hypertensive patients had the low level of knowledge about the health issues.[13] In Turkish population, it was also found that the participants had the low level of knowledge about HT.[14]

WHO calls attention to importance of primary health care in struggle against HT and it pointed that health professionals, especially nurses, should take part in creating awareness among the society members and they should take active role in organizing educational meetings about risk factors.[1,15]

Purpose

The aim of this study was to search the relation between knowledge about HT, socio-demographic characteristics and obtaining controlled BP levels among patients diagnosed with HT.

Conceptual framework of this study

In this study, effects of HT knowledge level and socio-demographic factors on HT control were made by multivariate analysis that examined which variables were more important.

Materials and methods

Study design

This was a cross-sectional study aimed at identifying the knowledge about HT which impacts the controlled BP levels of patients with HT.

Setting and samples

The study population was obtained from subjects diagnosed with HT and applied to primary health care centers in Yozgat province center between January 2013 and December 2013. Random cluster sampling method was used to determine sample size. There had been 7 Family Health Centers (FHC) in the province center at the time of sampling. Of them, three FHCs (1, 3, and 5) were selected randomly for sampling. According to TSI 2012 data,[16] Yozgat province center has 78,328 residents and the number of people aged above 18 years old was approximately 56,000. SaltTurk trial reported the frequency of HT prevalence among adults over 18 years old as 35%.[8] Considering all these data, the expected number of people with HT above 18 years old was 19,600 people. Size of the sample was determined as follows: The estimated sampling universe (people with HT) = 19,600; the ratio of subjects with BP under control = 30% (according to CDRFS results)[10]; deviation of this ratio = 0.05; and the probability of a making type I error (α) = 0.05. As a result, the estimated sample size was found to be 343 people. Since multivariate analyses were planned for BP levels, level of knowledge about HT and socio-demographic characteristics, it was decided to increase the number of subjects 50% more than the estimated sample size. Finally, 485 subjects were enrolled into the study.

Ethical consideration

Informed consent of each subject, ethical and official approval from the local authorities were obtained for the study accordingly and the investigation was performed in accordance with the principles outlined in the Declaration of Helsinki.

Measurement

A questionnaire was prepared by the researchers in accordance with the literature to measure the level of knowledge about HT. The questionnaire had 15 items as follows: three questions about BP classification; four questions about HT complications, four questions about treatment and BP control; and four questions about signs and follow-up of HT.[17] And also a survey was formed to get data about socio-demographic characteristics of the subjects. Total scores for the questionnaire about HT knowledge ranged from 0 to 15 at maximum. The subjects were classified further in respect to the scores obtained from the questionnaire as follows: low level of knowledge <8 points; moderate level of knowledge 8 to 11 points; and adequate level of knowledge ≥12 points.[17]

Procedure

The questionnaire and survey were fulfilled by the subjects under the observation of an independently trained interviewer. Height and weight of all subjects were measured with automatic digital scale at morning times between 08:00 to 11:00 o'clock under casual clothes without shoes. The blood pressure (BP) levels were measured from the right and left arms of the subjects in a sitting position by one trained observer blind to the study at the place of interview. BP was measured twice with 10 min interval. The systolic BP (SBP) and diastolic BP (DBP) were recorded at the first and fifth Korotkoff phases respectively using a mercury sphygmomanometer. The average of the four BP measurements was used for analysis. BP levels were classified in accordance with Joint National Committee Report-7 as follows: normal: SBP <120 mmHg and DBP <80 mmHg; PreHT: SBP 120–139 mmHg and/or DBP 80–89 mmHg; HT: ≥140 mmHg and/or ≥90 mmHg.[18] The Joint National Committee Report-8 recommend, in the general population aged 60 years or older, initiate pharmacologic treatment to lower BP at SBP of 150 mmHg or higher or DBP of 90 mmHg or higher and treat to a goal SBP lower than 150 mmHg and goal DBP lower than 90 mmHg.[19] The subjects who have BP measurement of SBP <140 mmHg (≥60 age,