ARAŞTIRMA

THE IMPACT OF TRAINING AND HEALTHCARE SERVICES OFFERED DURING HOME VISITS ON TENSION CONTROL AND LIFE BEHAVIOURS OF AGED INDIVIDUALS IN TURKEY

Ayşe SAYAN ÇEVİRME*   Mustafa YILDIZ**   Dilek AYGİN ***
Birsel KAVAKLI ****

ABSTRACT

Early diagnosis of hypertension in vast masses and control of tension constitutes a major part of the public health studies. The aim of this study is to identify the impact of information and healthcare services provided during the home visits on the effectiveness of developing life quality and bringing in life behaviour related to health. The design of the study was single -grouped pre-test and post-test. Forty-eight individuals of 65 years of age or older who have had hypertension diagnosis for at least six months were involved in the study. A nursing initiative encompassing training-healthcare services was carried out from the first week. Patients were provided with seven-week-of training in total with 2-week intervals. Data were obtained by means of a questionnaire, blood pressure, Body Mass Index (BMI) measuring and Health Promotion Life-style Profile (HPLP)Data were analyzed by using SPSS. At the end of study, a statistically significant decrease was observed in blood pressures and BMI values while a statistically significant increase was observed in nutrition, health responsibility and stress management behaviours.

Keywords: *Aged, lifestyle, hypertension, nursing, home visits*

ÖZET

Ev Ziyaretleri Sırasında Verilen Eğitim ve Bakım Hizmetlerinin Türkiye'deki Hipertansiyonlu Yaşlı Bireylerin Tansiyonlarının Kontrolü ve Yaşam Davranışları Üzerine Olan Etkinliği

Hipertansiyonun geniş kitlelerde erken tanınması ve kontrol altına alınması halk sağlığı çalışmalarının önemli bir bölümüdür Bu çalışmada amaç, ev ziyaretleri sırasında verilen bilgi ve bakım hizmetlerinin hipertansiyonlu hastaların tansiyonlarını kontrol altında tutma, yaşam kalitesini geliştirme ve sağlığa ilişkin yaşam davranışları kazandırma etkinliğini belirlemektir. Çalışma tek guruplu pretest-post-test olarak dizayn edildi. Çalışmaya 65 yaş ve üstü, en az 6 aydan beri hipertansiyon tanısı almış olan 48 birey dâhil edildi. Birinci haftadan itibaren eğitim-bakım hizmetlerini içeren bir hemşirelik girişimi uygulandı. Hastalara 2 hafta aralıklarla toplam yedi kez eğitim verildi. Veriler; anket formu, kan basınçları, beden kitle indeksi ölçümleri ve sağlıklı yaşam biçimi davranışları ölçeği (SYBDÖ) aracılığıyla elde edildi. Verilerin analizinde SPSS istatistik programı kullanıldı. Çalışmanın sonucunda bireylerin kan basınçları ve BKI değerlerinde istatistiksel olarak anlamlı azalma, beslenme, sağlık sorumluluğu ve stres yönetimi davranışlarında ise istatistiksel olarak anlamlı artma görüldü.

Anahtar Kelimeler: *Yaşlılık, yaşam tarzı, hipertansiyon, hemşirelik, ev ziyaretleri*

INTRODUCTION

Hypertension is one of the most important health problems seen in agedness being one of the major reasons of cardiovascular diseases. Elder people are more likely to have hypertension and isolated systolic hypertension. They are also more likely to have target organ damage and clinical cardiovascular disease, and to develop cardiovascular events. Finally, the reality is that they are also less likely to have their hypertension controlled. Early diagnosis and regulation has a vital role in preventing ischemic heart diseases and cerebrovascular diseases, which are among the first five cause of death especially in aged individuals (Önal and Tümerdem 2001)

Hypertension is also the most crucial risk factor of apoplexy, which is the third death cause in world after heart diseases and

* Sakarya Üniversitesi, Sağlık Yüksekokulu (Yrd. Doç Dr)
** Kartal-Koşu yolu Kalp Eğitim Araştırma Hastanesi (Doç Dr)
*** Sakarya Üniversitesi, Sağlık Yüksekokulu (Yrd. Doç Dr)
**** Anadolu Sağlık Merkezi (Prof Dr)

cancer. While hypertension was considered an unavoidable result of agedness previously, today that it is a preventable process developing from many risk factors is understood (Önal and Tümerdem 2001, Van der Sande et al. 2001, Ammerman et al. 2003).

By the year of 2000, it has been predicted that 26.4% of adult population in world suffer from hypertension and this ratio will rise to 29.2% in 2025 (Arıcı et al. 2006). It has been stated that one in three adults suffers from hypertension, and the hypertension prevalence in geriatric population (≥ 65 years of age) is 75.1% (67.2 % in men, 81.7% in women) (Arıcı et al. 2006). In many studies, it is put forward that the hypertension prevalence rises to 60-80s% after the age of (Hurley et al. 2006, Van der Sande et al. 2001, Ammerman et al. 2003, Erbaşı and Tüfekçioğlu 1999).

Hypertension is observed both in world and in Turkey frequently and it is possible to be taken under control. In many studies, it was found that there is a relation between high blood pressure and health-related lifestyle behavior and the life qualities of hypertensive individuals is low (Banegas et al. 2006, Lee 2006, Ammerman et al. 2003). In these studies, the fact that daily life activities are limited by hypertension, but the side effects of medicines may also be responsible for this condition is defined (Banegas et al. 2006, Lee 2006).

Today it is said that immunization and fight against endemic diseases prolong the life span; however, nutrition based on fast food that we may call 'West-type' diet which is rich in food of animal origin and fast food, inactivity, obesity, smoking, poor living conditions urbanization brings about, and increasing stress are identified as the factors increasing the risks of cardiovascular diseases, hypertension and apoplexy (O'Dea and Wilson 2006, Van der Sande et al. 2001).

According to Lee (2006), an individual should be conscious of his own current physical situation and health level to display behaviour that will upgrade his health level. Hypertensive individual's knowledge on his/her current health condition and blood pressure affects his potential to control his tension and chance of respond to the treatment (Lee 2006). It is claimed that treatment and control of hypertension decreases mortality by 20% and myocardium infarct and instantaneous cardiac fatalities by 16% (Erbaşı and Tüfekçioğlu 1999).

Works on early diagnosis and control of hypertension in wide masses form an important part of the public health activities.

Most of the hypertensive-aged individuals do not possess required knowledge attitude towards keeping their tensions under control exhibiting healthy lifestyle behaviour. It is believed that the individuals will perceive the importance of health improvement behaviour, display much more positive attitudes behaviour and apply their knowledge on life thanks to the information on health protection-improvement provided to the individuals.

The aim of this study is to define the effectiveness of information and healthcare services offered during home visits on controlling the tensions of the patients with hypertension, improving the life quality and bringing in life behavior related to the improvement of health.

MATERIAL AND METHODS
This study was conducted between 1 November–30 December 2008 in Serdivan, Kemalpaşa and Bahçelievler Health Centers affiliated to Sakarya Provincial Health Directorate, and single-grouped pretest-post test research model was applied in the study.
Study Design and Participants
Fifty individuals, who were willing to participate as per the principle of willingness, had had hypertesion diagnosis for at least 6 months and were 65 years of age or older, accepted the nursing initiatives to be applied were involved in the study. Because of the death of one of the participants and unwillingness of another participant to continue home visits, the study was kept going with 48 individuals (29 women, 19 men, average age: 68.1±6.3 years of age).
Ethical Considerations
The study was formally approved by the Clinical Research Ethics Committee of the Sakarya University School Of Health in Sakarya. Necessary official permissions were obtained from the Provincial Directorate of Health. The responsible physicians of the health centres were contacted and the survey was conducted with their support. Furthermore, the elderly who volunteered to participate in the survey were informed about the aim and the procedure of the study.

Limitations

A limitation of this study is a small sample size, and the people involved can not be regarded as the representatives of the general population in Turkey. The results of our findings limit the generalizability to the entire population of older adults in Turkey.

The Procedure

The model of face-to-face conversation and performing home visits in the study obtained the data. Conversation form which is consists of 29 questions, and demographic and disease story variables related to the patient was used in collecting data. Systolic and diastolic blood pressure values of the individuals were taken (Önal and Tümerdem 2001). Body mass index (BMI) measures were taken (Seyfeli et al. 2006). Health promotion Life-style Profile (HPLP) was used in measuring the behaviors of nutrition, health responsibility and stress management in healthy lifestyle behaviors (Pender et al. 1992, Esin 1997). Training and nursing initiative table was used for determination of the effectiveness of home visits and training and nursing initiatives (Schema 1). This schema, which embodies target and initiatives on the control of hypertension, healthy lifestyle behaviors, weight reducing and lifestyle changes, have been developed under the light of epidemiological and clinical studies (Erbaşı and Tüfekçioğlu 1999, Sobel and Bakris 2003, http://www.americanheart.org/presenter.jhtml?-identifier= 2112 .2006).

Required assents were provided from the institutions in which the study was going to be conducted. The superiors and health personnel of the clinics in which the study was to be conducted were informed about this subject. Three volunteered personnel in addition to the two researchers (five implementers in total) were assigned for implementing the training and nursing initiative and the home visit. The researchers were trained about the training they were to offer during the home visits Moreover, they were informed on hypertension measuring and HPLP, BMI measuring and the conversation for to be used.

Application stage was completed for enabling the functioning of the program. Fifty hypertensive volunteers were divided into 5 groups each group including 10 persons and 1 researcher was designated responsible for each group for the home visits and nursing initiatives that would last seven weeks. Each researcher paid a home visit, which lasted 35-45 minutes after he/she had made an appointment with the patients in his/her own group. In the first week of the home visit, the conversation form and HPLP were exercised. Blood pressure (two times after one another with 5 minutes interval) and BMI were measured. Then, the hypertensive individuals underwent a 7-week training program encompassing the subjects such as the issue and importance of taking the tension drugs regularly, and necessity and importance of changing the lifestyle in order to take hypertension under control. The training was provided according to the prepared nursing Schema 1. Each individual underwent a seven-week-of nursing process developed for him/her under the light of the Schema 1. The blood pressure was measured for seven weeks. Each time the measure was taken for two times one after another by 5 minutes interval between two measures, and the average value of these two measures was written down. After the seven-week-of application, BMI measures of the individuals were taken again and HPLP was applied again.

Measuring Body Mass Index (BMI)

The value obtained by dividing the weight as kilograms by the square of length as meters display BMI. The BMI value of 18.5-24.9 kg/m2 is considered as ideal weight, the value of above 25 but fewer than 30 is marginally overweight, above 30 is considered as very overweight or obese, and above 40 is considered as morbid obesity (Seyfeli et al. 2006).

Measuring Tension (Arterial Blood Pressure)

American Heart Association and related literature evaluated the arterial blood pressure values in compliance with the recommendations. (http://www.americanheart.org/presenter.jhtml?identifier= 2112.2006, Onat et al. 2004, Önal and Tümerdem 2001). Arterial blood pressure measures were taken in a silent room of home after a 5-minute-of resting at a sitting position and from the right arm of the individual. The measures were made on brachial artery as radial pulse controlled in a manner that the pressure would fall down by 2 mmHg per second (Önal and Tümerdem 2001). That the systolic blood pressure is or above 140 mmHg and the dialostic blood pressure is or above 90 mmHg is accepted as hypertension (http://www.americanheart.org/-presenter.jhtml?identifier= 2112.2006, Onat et al. 2004).

Nursing diagnosis	Goals and initiatives
Inability to regulate blood pressure	-To elicit, taking pills regularly
Lack of healthy lifestyle behaviour	-To provide that, individual know his/her health level, and to make his/her care about his/her health -To increase physical activity (at least 3 days/week, 30-45 min.) -Low sodium diet -Increasing, potassium, magnesium and calcium intake, due to improve cardiovascular health -Reducing saturated faty acid and cholesterol intake -To stop smoking -Teaching stress management techniques (by using individualised cognitive behavioural techniques) -Reducing weight
Inappropriate BMI values, to health standards	-To prevent having a sedater life style -To increase physical activity (at least 3 days/week, 30-45 min.)

Schema 1. Nursing initiatives for hypertension control and healthy lifestyle behavioural changes

Health Promotion Life-Style Profile

Behaviour such as nutrition, physical exercise and management of stress, which are identified as effective especially on heart and vascular health, were defined as the healthy lifestyle behaviours, and health responsibility, nutrition and stress management, which are among the six sub-dimensions of HPLP, were exploited for measuring this behaviour (Van der Sande et al. 2001). The minimal number for the health responsibility sub-dimension of HPLP is 10 while the highest number is 40. The minimum number for the nutrition sub-dimension is six while the maximum is 24. Likewise, the minimum number defined for the sub-dimension of stress management is seven and the maximum number is 28.

Walker, Sechrist and Pender developed the Health Promotion Life-style Profile in 1987 (Pender et al. 1992) and it measures the behaviour improving health in accordance with the individual's healthy lifestyle. Validation and confidence studies of the scale were carried out by Esin (1997) in Turkey. The scale is made up of 48 statements and 6 sub-dimensions in total. These sub-dimensions are; self-fulfilment, health responsibility, physical exercise, nutrition, support between individuals, and stress management. Each dimension can be used on its own independent of each other. All statements of this scale, which is the type of likert, are favourable.

Variables

The researchers collected the data via face-to-face conversations. Demographic features constituted the independent variables of the study. Health responsibility, nutrition, stress management numbers, blood pressure values and BMI values, which are among the six sub-dimensions of HPLP, made up the dependent variables.

Statistical Analysis

All data was recorded using SPSS 11.0 statistics package program. All parameters were displayed as average and percentile. Meaningfulness and correlations between pre-training and post-training blood pressures, the average numbers of BMI and healthy lifestyle behaviour of the participants were assessed by Paired sample t-test. Pearson correlation was hold to study the relation between the demographic features such as age, sexuality, marital status and education, and blood pressures, BMI and healthy lifestyle behaviours. Independent sample t-test and one-way ANOVA tests were conducted to detect the difference between groups.

Chronbach's Alpha coefficient of the scale was 0.92 and 0.77 for the subscale health responsibility, 0.79 for physical activity, 0.68 for nutrition, 0.79 for mental development, 0.80 for interpersonal relationships and 0.64 for stress management. However, health responsibility, nutrition and stress management, sub-dimension of HPLP was only used in this study.

RESULTS AND DISCUSSION
Home visits and the public health nurses, who pay this visits, have a key role in bringing in positive lifestyle behaviour to the hypertensive individual and keeping their blood pressures in reasonable levels. Harmony of the individual is an important reason among the difficulties before being unable to carry on sufficient follow and treatment. Home visits may eliminate problems of harmony. Measures taken at home can eliminate many mistakes caused by pertinacious stress and acute responds, which is largely blamed for "white apron" hypertension; also, they help taking more accurate tension measures and contribute to the assessment of the responds towards hypertensive medicines (Sobel and Bakris 2003, http://www.americanheart.org/presenter.jhtml?id entifier= 2112, 2006, Kaplan 1998). In this context, the findings obtained from these studies were discussed under the light of literature.

The results of our research show that the individuals can learn the information that is given by means of systematically structured educational nursing process, and that they can harmonize with the applied program

Demographic Features
The average age of the individuals in the study was estimated as 68.1 ± 6.3. Forty three point eight percent of the participants (n=21) were secondary school graduate and 91.7% (n=44) lived with their spouses and children. When their disease stories were examined, it was founded that 8.3% of the participants (n=4) suffered from chronic obstructive lung disease (COLD), 10.4% (n=5) suffered from myocardium infarct (MI), 6.3% (n=3) suffered from diabetes mellitus (DM) and 2.1% (n=1) suffered from apoplexy. Twenty seven point one percent of participants (n=12) were found to be complaining from insomnia, 54.2% (n=26) were found to have an unhealthy nutrition behaviour. Fifty-eight point three percent of the individuals (n=28) suffered from at least one chronic disease. Table 1 displays some of the demographic features, attitude and awareness of one's own blood pressure.

Table1. Demographic Features Attitude and Awareness of One's Own Blood Pressure (n=48)

Age (Mean ± SD)	68.1 ± 6.3
Gender (M / F)[1]	19 / 29
The patients with at least one chronic illness (%)	58.3
The patients who regulary used / didn't used antihypertensive pill (%)	75 / 25
The patients who know how to measure blood pressure / do not know how to measure blood pressure (%)	38 / 62
The patients who know the consequences of high blood pressure / don't know the consequences of high blood pressure (%)	82 / 18

[1]M:Male, F:Female

It has been found that the individuals participating to the study and taking medicines have taken their medicines irregularly (25%) and that only three of four (75%) took their medicines on the time and periods the doctor prescribed. Medical treatment and continuity of this is of great importance in the control of tension. We have also focused on this issue in our study and we suggest that regular medication is the primary treatment of hypertension; systematic information has always been given to the individuals on this issue during the visits. Requirement to take medicines regularly, which is one of the targets of this study, has also been supported by literature. Sytkowski et al. (1996) suggests that regular medication decreases cardiovascular mortality by 60% in comparison with the patients taking no medicines.

Sixty two percent of the hypertensive individuals (n=30) stated that they did not know to measure their own tensions and they requested help from others, 78% (n=37) stated that they had their tensions measured at least three times during the last six months, and 18% (n=9) stated that they did not have any information on the results and complications of hypertension.

According to their medicine taking behaviour, it was determined that all of the individuals were taking anti-hypertensive medicines and 75% (n=36) were taking their medicines regularly.

Blood Pressures

When Table II, Figures 1 and 2 are examined, it can be seen that pre-training and nursing initiative (Pre-TNI) systolic blood pressure was 167.18 mmHg and the diastolic blood pressure was 96.04 mmHg, while post-training and nursing initiative (Post-TNI) systolic blood pressure was 147.18 mmHg and the diastolic blood pressure was 85.41 mmHg. The difference between the blood pressure averages have been found meaningful (t=5.98, p<0.001; t=7.94, p<0.001).

There was not a meaningful relation between the blood pressure and the demographic features, BMI and healthy lifestyle behaviours (p>0.05).

Table 2. Clinical and Hemodynamic Features about the İndividuals and Significant Levels (n=48)

Parameters	Pre-TNI[c]	Post-TNI[d]	t*	df**	p***
Systolic blood pressure (mmHg) (Mean ± SD)	167.18±25.57	147.18 ± 19.32	5.98	47	0.001
Diastolic blood pressure (mmHg) (Mean ± SD)	96.04 ±13.00	85.41 ± 10.04	7.94	47	0.001
BMI (kg/m2) (Mean ± SD)	28.4 ± 4.97	28.2 ± 4.94	3.25	47	0.002
Health Responsibility (Mean ± SD)	18.70 ± 4.11	21.89 ± 4.42	-8.29	47	0.001
Nutrition (Mean ± SD)	14.97 ± 2.99	17.81 ± 3.29	-7.97	47	0.001
Stress Management (Mean ± SD)	12.35 ± 2.99	15.04 ± 4.24	-6.39	47	0.001

*Paired sample t-test, ** df: degree freedom, *** p<0.001
[c] Pre-TNI: pre-training and nursing initiative
[d] Post-TNI: pre-training and nursing initiative
BMI: Body Mass Index

Considering the results of this study, a difference was found between pre-training and post-training blood pressures with the nursing initiative applied; it was found that home visits, and the training and nursing process provided during these visits resulted with to about 2 mmHg decrease in the systolic blood pressure and about 1 mmHg decrease in diastolic blood pressure. This meaningful drop in the blood pressure averages also displays parallelism with the literature data (Garcia et al. 2001, Erci et al. 2003, Gruesser et al. 1997).
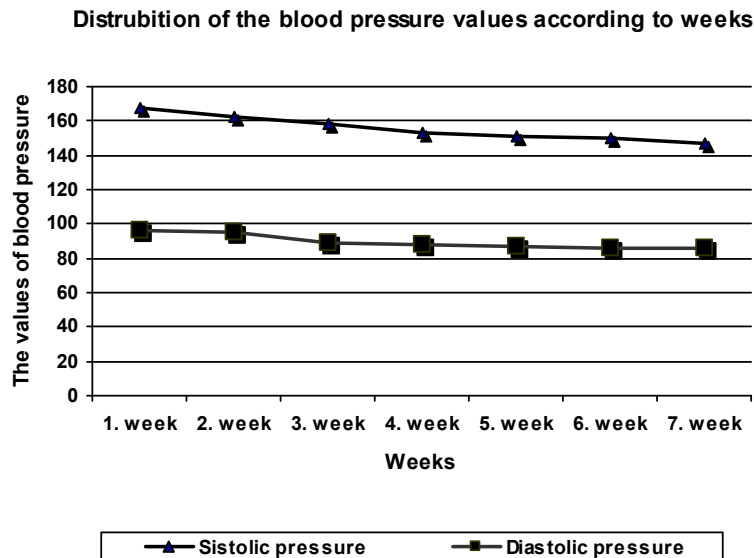

Figure. 1. Distribution of the blood pressure values according to weeks

Gruesser et al. (1997) said that the systolic blood pressures of hypertensive individuals fell down to 148 ±17 mmHg from 158±18mmHg and that the diastolic blood

pressures fell down to 86±9 mmHg from 91 ±9mmHg pursuant to the training program that lasted 22 weeks.

Body Mass Index

Considering Pre-TNI (BMI1), the average BMI1 of women was 29.2±5.6, the average of men 27.1±3.5, and the average body mass indexes of two groups was 28.4 ± 4.97. On the other hand, considering Post-TNI (BMI2), BMI2 the average of women was 29.0±5.6, the average of men 27.0±3.4, and the average body mass indexes of two groups was 28.2 ± 4.94; the difference between pre-and post test was regarded as statistically meaningful (t=3.25, p<0.002) (Table 2).

It is known that there is a relation between body mass index and hypertension (Arıcı et al. 2006, Slama et al. 2002). One of the first targets in lifestyle changes is to reach one's the ideal weight and keep this weight. BMI within the ideal limits is known to retard hypertension even if it does not prevent it (Kaplan 1998, Sobel and Bakris 2003).

While BMI averages of Pre-TNI hypertensive aged individuals was rather high, oil-free nutrition, consumption of fiber foods, nursing initiatives applied for 7 weeks regularly including information on physical exercise, and the trainings gave rise to decrease in BMI averages. These decreases are statistically meaningful.

Leung et al. (2005) stated that the training provided did not prove efficient in weight reducing although the participants were satisfied and harmonized with the program in the works on hypertension training program, which they realized with a small group. In this respect, our findings display some differences. The findings of this study show that providing regular training decreased in BMI averages. The difference in our studies may originate from the fact that the individuals within the scope of our research took part in this work voluntarily. Showing readiness towards this research may improve the harmony and therefore the desired change may be reached in an easier manner. Moreover, we are of the opinion that the fact that the applied nursing initiatives were specific to the individuals was efficient in decreasing average of BMI.

The average BMI is 26.8 kg/m2 in Turkish society (Kaplan 1998) Arıcı and his friends states in their studies that BMI averages is 29.8 kg/m2 in hypertensive individuals while it is 25.1 kg/m2 in normotensives (Arıcı et al. 2006). In our research, BMI averages in hypertensive individuals are in parallel with the findings of Arıcı and his friends, but they are low relative to the general average; still they are in compliance with the related literature (Arıcı et al. 2006, Garcia et al. 2001).

No meaningful difference was found between the sexuality groups as per pre-test and post-test BMIs (BMI1; p=0.121, BMI2; p=0.131). No meaningful relation between BMI and demographic features (age, sexuality, marital status, etc.), blood pressure averages and healthy lifestyle behaviours (nutrition, health responsibility, stress management) (p>0.05).

Dickey and Janick (2001) emphasized that there was a strong relation between weight and blood pressure in all age groups and in both sexualities, and that weight-loss both decreased the blood pressure and prevented the primary hypertensive.

A statistically meaningful relation have been detected only between the stress management, which is one of the healthy lifestyle behaviours, and the educational level, which is one of the demographic features (stress1= r=-0.288, p=0.047, stress2= r=-0.404, p=0.004).

According to the Post-Hoc Test, groups that are secondary school graduate and literate cause this meaningfulness.

Average Points in Health Responsibility, Nutrition and Stress Management

The average points of health responsibility, nutrition and stress management which are among the Pre-TNI health promotion life-style profile are respectively; 18.70 ± 4.11, 14.97 ± 2.99, 12.35 ± 2.99, respectively; the averages of Post-TNI health responsibility, nutrition, stress management are respectively; 21.89 ± 4.42, 17.81 ± 3.29, 15.04 ± 4.24 Considering the point averages as per pre-training and post-training, the difference has been regarded as statistically meaningful (t = -8.29, p <0.001, t = -7.97, p<0.001, t = -6.39, p <0.001) (Table 2, Figure 2).

Changes in lifestyle; weight-reducing if one is overweight (decrease in BMI), increasing aerobic physical activity (at least three times in a week for 30-45 minutes), limiting the sodium intake by 2.4 gr sodium or 6 gr sodium chlorite, ensuring a sufficient amount of potassium, magnesium and calcium intake, ceasing

smoking, and decreasing saturated fatty acid and cholesterol intake for cardiovascular health, may also decrease other cardiovascular risk factors by minimum cost and risk, while it is efficient in preventing hypertension and decreasing blood pressure; in addition, they may decrease the number of antihypertensive medicine potion and amount even if they are inadequate in hypertensive control by themselves (Sobel and Bakris 2003, Erci et al. 2003, Verheijden et al. 2003, Melen et al. 2004).

Health responsibility, nutrition and stress management levels according to Pre-TNI and Post-TNI
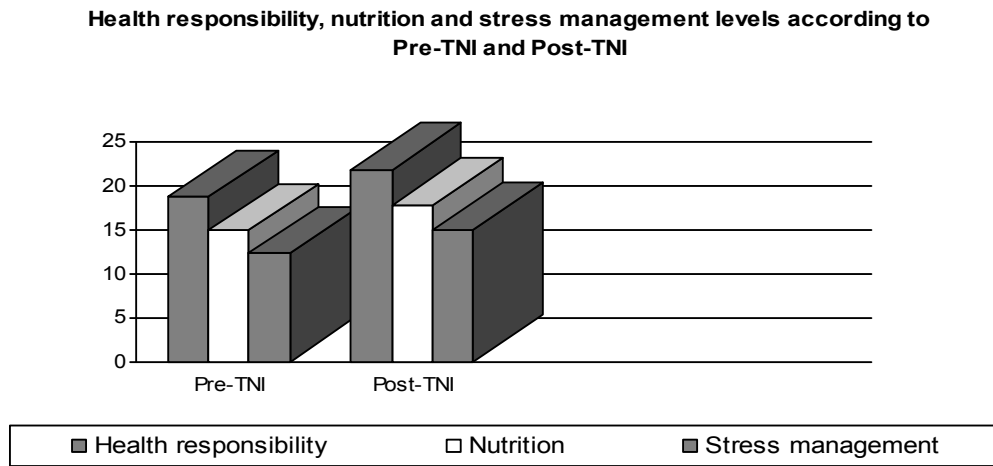

Figure 2. Health responsibility, nutrition and stress management levels according to pre-TNI* and post-TNI**.
*Pre-TNI: pre-training and nursing initiative
**Post-TNI: post-training and nursing initiative

Points of health responsibility, which means being responsible for one's own health and referring to professionals when it is necessary and requesting help has increased nearly 3 points during the home visits made regularly and after the training provided. It has been witnessed that the difference between Pre-TNI and Post-TNI points is statistically meaningful.

In our study, risk determination (tension measuring and BMI measuring) has been executed so as to increase the individual's potential to take responsibility about his/her health and the individuals were informed on their health status. Favourable changes were created in health responsibility behaviours by means of this systematic information.

Vural (1998) stated that determining the health risk and the initiatives in this respect affected the lifestyle behaviours. The fact that our study includes a small number of individuals is an important restricting factor.

Considering the sub-dimension points of the healthy lifestyle behaviours in Pre-TNI and Post-TNI, nearly 3-points-of increase has been observed after the 7-week-of application and this means a positive development in nutrition behaviour. This change in behaviour is a desired result. The favourable change in nutrition behaviour may also be provided with a training-consultancy service which is also supported by literature information (Verheijden et al. 2003, Melen et al. 2004).

Considering the points of stress management, it can be seen that there has been an increase in Post-TNI points and the difference between Pre-TNI and Post-TNI is statistically meaningful.

It can be claimed from the findings of our study that home visits and nursing initiatives have increased the stress management potentials of the individuals. Another reason lying behind the decrease in their stress levels may be the fact that they share their problems. In addition, each individual in our research has been considered independently from other individuals and each has been observed in the environment he/she lives; and the problems and nursing initiatives have been guided in this respect. In other words, individualistic behavioural treatment and approach has been exhibited. Our findings are promoted by related literature (Grimm et al. 1997, Sobel and Bakris 2003, http://www.-

americanheart.org/presenter.jhtml?identifier= 2112, 2006).

Spence et al. (1999) stated that relaxing exercises, mediation, biological feedback and individualistic cognitional behavioural approaches were more efficient in stress management and so in taking hypertension in control of essential hypertension than unilateral and general cognitional behavioural approaches.

CONCLUSIONS

The findings of this study show that providing regular training for hypertensive elderly and promoting affirmative changes in healthy lifestyle behaviour is of great importance in improving the life quality, preventing high blood pressure and affiliated complications. Nurses and physician extenders (nurse practitioners, physician assistants) need to recognize the importance of the nonpharmacologic treatment of hypertension, and further work is needed to translate the knowledge gained from clinical trials into widespread clinical practice. This may include nursing training in patient-centered counselling methods and increased funding for and utilization of adjunctive nutrition and fitness counsellors.

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