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Gaio, Daniela Maria; Ulbrich, Elis Martins; Mantovani, Maria de Fátima; Castanho Moreira,  
Ricardo

IMPORTANCE OF NURSING HOME CARE FOR BLOOD PRESSURE CONTROL IN  
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RESEARCH

IMPORTANCE OF NURSING HOME CARE FOR BLOOD PRESSURE CONTROL IN PEOPLE WITH HYPERTENSION  
IMPORTÂNCIA DO CUIDADO DOMICILIAR DE ENFERMAGEM PARA O CONTROLE PRESSÓRICO DE PESSOAS COM HIPERTENSÃO ARTERIAL  
IMPORTANCIA DEL CUIDADO DOMICILIARIO DE ENFERMERÍA PARA EL CONTROL DE LA PRESIÓN ARTERIAL EN PERSONAS CON HIPERTENSIÓN

Daniela Maria Gaio<sup>1</sup>, Elis Martins Ulbrich<sup>2</sup>, Maria de Fátima Mantovani<sup>3</sup>, Ricardo Castanho Moreira<sup>4</sup>

ABSTRACT

**Objective:** To describe the effect of home care nursing in knowledge, hospitalization and blood pressure levels in patients with hypertension treated impaired. **Method:** quantitative research with a retrospective design, made from the database extension project developed in a basic health unit of a municipality in the metropolitan region of Curitiba-PR. The activities included in the project were educational group and follow-up at home for 12 months. The sample consisted of 16 users with hypertension. **Results:** There was a higher frequency of women with a mean age of 63 year old. There was improvement in knowledge about hypertension, reduction in the rate of hospital admission due to hypertensive crisis and increase in the proportion of individuals with controlled blood pressure. **Conclusion:** The home care was effective in controlling blood pressure. **Descriptors:** Hypertension, Nursing care, Home nursing.

RESUMO

**Objetivo:** descrever o efeito do acompanhamento domiciliar de enfermagem no conhecimento, internação hospitalar e níveis pressóricos de pacientes portadores de hipertensão arterial com tratamento comprometido. **Método:** pesquisa quantitativa com delineamento retrospectivo, realizada a partir do banco de dados do projeto de extensão desenvolvido em uma Unidade Básica de Saúde de um município da região metropolitana de Curitiba-PR. As atividades desenvolvidas pelo projeto incluíram ações educativas em grupo e acompanhamentos no domicílio durante 12 meses. A amostra foi composta por 16 usuários com hipertensão arterial. **Resultados:** Houve maior frequência de mulheres, com média de idade de 63 anos. Observou-se melhora no conhecimento acerca da hipertensão arterial, redução na taxa de internação hospital decorrente de crise hipertensiva e aumento na proporção de indivíduos com pressão arterial controlada. **Conclusão:** O acompanhamento domiciliar mostrou-se eficaz no controle pressórico. **Descritores:** Hipertensão, Cuidados de enfermagem, Assistência domiciliar.

RESUMEN

**Objetivo:** Describir el efecto de la atención domiciliar de enfermería en lo conocimiento, hospitalización y niveles de presión arterial en pacientes con hipertensión tratada con discapacidad. **Método:** investigación cuantitativa con un diseño retrospectivo, a partir de una base de datos del proyecto de extensión desarrollado en una unidad básica de salud de un municipio en la región metropolitana de Curitiba-PR. Las actividades desarrolladas en el proyecto fueron las acciones educativas en grupo y el seguimiento en el hogar durante 12 meses. La muestra constó de 16 usuarios con hipertensión. **Resultados:** Hubo una mayor frecuencia de mujeres con una edad media de 63 años. Hubo una mejora en el conocimiento sobre la hipertensión, la reducción en la tasa de ingreso hospitalario por una crisis hipertensiva y el aumento de la proporción de individuos con presión arterial controlada. **Conclusión:** La atención en el hogar fue eficaz en el control de la presión arterial. **Descriptor:** Hipertensión, Atención de enfermería, Atención domiciliar de salud.

<sup>1</sup>Nurse Family Health Team of Chopinzinho, Parana. E-mail: daniela\_gaio@yahoo.com. <sup>2</sup>Student of the PhD in Nursing UFPR. Member of the Study Group on Multiprofessional Adult Health (GEMSA). E-mail: lilaulbrich@yahoo.com.br. <sup>3</sup>PhD in Nursing. Professor of UFPR. GEMSA member. Scholarship Productivity 2 CNPq 2. E-mail: mfatimamantovani@ufpr.br. <sup>4</sup>Student of Doctoral Nursing UFPR. GEMSA member. Assistant Professor-B UENP. E-mail: ricardocastanho@uenp.edu.br.

INTRODUCTION

Currently, Chronic Noncommunicable Diseases (NCDs) are presented in dimensions epidemic across America and contribute to morbidity and mortality population. Among the NCDs, the cardiovascular system are the main causes of morbidity and mortality, affecting more and more people economically active at younger ages and thus contributing to decreased quality of life and economic productivity.<sup>1</sup>

In 2001, about 7.6 million deaths worldwide were attributed to elevated blood pressure, mostly in low-and middle economic development and more than half in individuals between 45 and 69 years. In Brazil, the mortality analysis indicates that the top three causes of death are, respectively, acute myocardial infarctions, strokes and heart failure, all related to the risk factor arterial hypertension (AH).<sup>2</sup>

Hypertension affects 20% to 30% of Brazilian adults, ranging from 5% in the population aged 18 to 24 years and 58% of the population over 65 years 3. In Rio Grande do Sul, one study estimated the prevalence of hypertension in the adult population at 33.7%, however, 49.2% were unaware of being hypertensive, thus corroborating with the asymptomatic nature of this disease. Of the remaining 50.8%, only 10.4% reported the following antihypertensive treatment and control had proper. In another study in Rio de Janeiro, the prevalence of hypertension among employees of an institution of higher education was 29.6%, and 81.5% were aware of their condition. Individuals with hypertension who were being treated, 60.1% were controlled.

Adequate control is defined as blood pressure less than 140/90 mmHg. Nationally, the percentage of hypertensive patients with blood pressure control is 19.6%. The control of

hypertension has become a challenge, since some subjects assign value judgments to their health status from the absence of symptoms and not by pressure measurement arterial<sup>6</sup>, which may contribute to noncompliance with treatment.<sup>7</sup>

Tackling chronic conditions should not follow the same logic of acute conditions, ie through technologies designed to respond to moments of exacerbation of chronic situations through attention to spontaneous demand, but rather to provide continuous monitoring and proactive people with chronic diseases such as HA.<sup>3</sup>

In this model of care, health professionals must choose how best to tackle these users to the guidelines on health education are put into practice, encouraging them to find alternatives to overcome the difficulties of treatment. To this end, the home visit provides a closer relationship with the user and his family, which provides a greater degree of commitment to membership change.

Therefore, the household space can be used to provide users with greater involvement and professional with your care plan and thus achieve health goals. Based on this assertion took place this study in order to describe the effect of nursing home care knowledge, hospitalization and blood pressure in patients with hypertension treated compromised.

METHODOLOGY

This is a retrospective study with quantitative treatment of the results, carried out from the database Extension Project "Systematization Assisting Patients with Hypertension" Program "Health Promotion Needs, Organization and Demand", the Federal University of Parana developed in a basic health unit of a

icipality in the metropolitan region of Curitiba - PR.

The activities developed by the project included accompaniments at home and educational group. The users were initially evaluated by nurses and nursing students, members of the extension project, in UBS and later received 12 biweekly home visits with an interval, for six months. Participants were reassessed six months after the last visit, with a total follow-up period of 12 months.

The sample selection was not probabilistic, consisting of 16 users with hypertension, who had at least two measurements of diastolic blood pressure less than 90 mmHg, in the months from October to December 2007.

Data were transferred to a spreadsheet program Microsoft Excel. The variables were sociodemographic, knowledge about the disease and treatment, hospitalization and blood pressure parameters during home care.

The results were presented in tables and graphs, in absolute frequency and percentage. Some associations of interest were performed using the chi-square test, with a significance level of 5%.

The project was approved by the Ethics Committee on Human Research (CEP) of the Department of Health Sciences, Federal University of Paraná (UFPR) with CAEE no. 009500910009 on December 14, 2009, and passing. 854.189.09.11 respecting the ethical principles established by Resolution 196/96 of the National Research Ethics (CONEP) of the Ministry of Health.

RESULTS AND DISCUSSION

Women accounted for 81.25%, with a mean age of 63 ± 14.8 years, married (68.75%), with education up to primary and monthly income of up to 1 to 3 minimum wages (87.5%). Of the participants, most reported not working on the follow-up period, 50% of carers own home and 25%

retirees or pensioners. As for housing, 68.75% lived in brick houses, 81.25% in houses with 3-6 rooms and 12.5% of users had sewage system in their homes.

Regarding the knowledge of pathology, 81.75% of users showed difficulty in defining hypertension, 56.25% correlated with hypertension risk factors, including nervousness (25%), poor diet (18.75%) and physical inactivity (18.75%). Although it was found that at both times (baseline and after 12 months), 18.75% of users remained without knowing the meaning of the illness.

The main significance of being a carrier of hypertension was defined as "bad" (68.75%) by participants in both the beginning and the end of follow-up. Of those who said they were present natural condition (18.75%), attach it to risk factors modifiable and non-modifiable that had during his life, such as food rich in sodium and fat, sedentary lifestyle, stress and heredity. The only participant who said it was "good" claims the fact that they have daily monitoring of their health and counseling by nursing staff, including the visits of family health team and the participants of the extension project.

Another inquiry was conducted regarding the perception on the difficulties in medication and non-medication. Initially, they did not mention problems to take their medication; however, 43.75% reported difficulty with care not medicated. After following up 18.75% reported difficulties with medication and 81.25% with a change in lifestyle.

The issues raised in relation to drug treatment mentioned at the end of follow-up was forgetting to take medication prescribed times, while the non-medication treatment, 50% reported difficulty in physical exercise, 31.25% in adopting practice healthy eating and 25% in control stress.

When asked about his knowledge of the pathology, it has been found that increased the amount of participants' responses at end of follow

Gaio DM, Ulbrich EM, Mantovani MF *et al.*

Importance of nursing care...

up in almost all aspects of treatment complications, signs and symptoms and definition of hypertension, as observed in Table 1.

Table 1 - Effect of nursing home care on the knowledge of users with hypertension enrolled in a Health Unit metropolitan region of Curitiba. Colombo (PR), 2012.

What you have to know about your illness	1 <sup>st</sup> meeting	Return	X <sup>2</sup>	p
Chronicity	06	12	4.57	0.03*
Risk factors	10	04	4.57	0.03*
Care	08	12	2.13	0.14
Complications	08	15	7.57	0.006*
Signs and symptoms	01	11	13.33	0.0003*
Definition	-	02	2.13	0.14
Total of the interviewed	16	16		

Source: The authors (2012).

At the beginning of the monitoring 37.5% of the participants recognized the chronic nature of hypertension and end of follow-up this number doubled. The nursing home care showed positive effect on their knowledge regarding the risk

factors, signs and symptoms and complications of hypertension.

Regarding the frequency of hospitalization due to hypertensive crisis in the last 12 months of the start and end of follow-up, there was an absolute reduction of 25% (37.5% versus 12.5%, p <0.001).

At the end of follow-up, participants reported changes in lifestyle obtained. Of the 16 monitored users, 87.5% reported that they have changed any habits of life. We highlight the changes related to food (81.25%), exercise (37.5%) and body mass reduction (18.75%).

Figure 1 shows the average point and interval of the evolution of pressure levels of participants, from the first to the 12th month, and the effect of nursing home care, in units of mm Hg in SBP and DBP over the months.

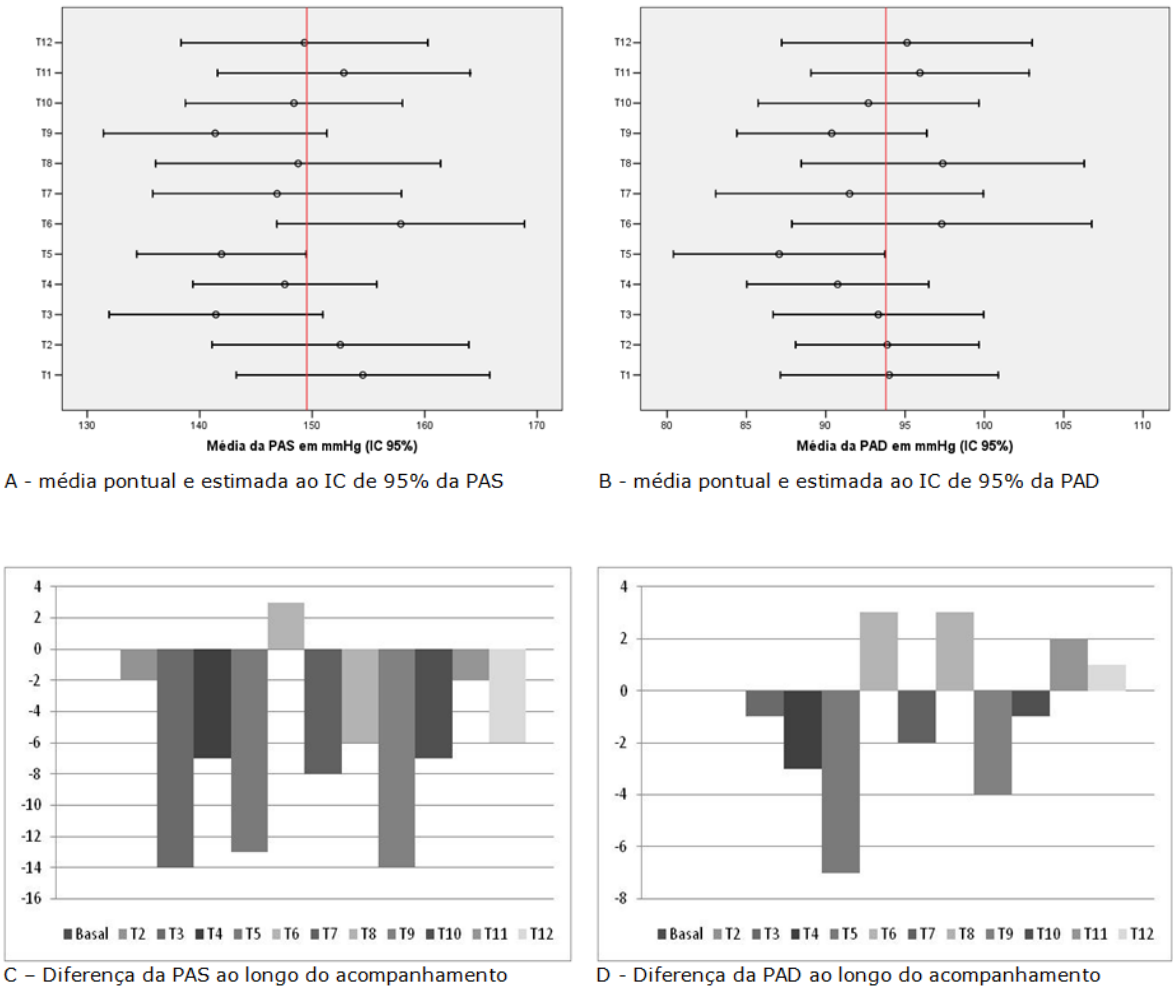


Figure 1 - Average point and interval SBP and DBP and evolution, in units of mmHg, the values of Systolic and Diastolic Blood Pressure, users with hypertension enrolled in a Health Unit metropolitan region of Curitiba. Colombo (PR), 2012  
SOURCE: The authors (2012).

Figures A and B show the average point and interval values of SBP and DBP. Although observe a slight reduction in blood pressure values, it is noted that the confidence intervals constructed for each mean arterial pressure at all times overlap. From first to fifth monitoring, the number of participants with PAD above the cut line decreased gradually until the lowest value during follow-up (T5). The SBP also showed a declining trend until the fifth home visit and subsequent visits ranged between 158 and 141 mmHg. In gauging after 12 months, SBP decreased on average 6 mmHg.

In Figure C, the largest reduction in SBP was 14 mmHg, with only a monitoring period (T6) increased SBP compared to the beginning of the project. In turn, in Figure D, there were periods with elevated DBP from the middle of the monitoring period. The proportion of participants with control of blood pressure and diastolic is shown in Table 2.

Table 2 - Proportion of participants with controlled blood pressure and diastolic blood pressure at follow-up period. Colombo (PR), 2012.

Time of care	PA < 140/90 mmHg		PAD < 90 mmHg	
	n	%	n	%
1 <sup>o</sup> Evaluation†	-	-	-	-
1	03	18,75	04	25,00
2	05	31,25	05	31,25
3	05	31,25	05	31,25
4	02	12,50	07	43,75
5	06	37,50	09	56,25
6	03	18,75	06	37,50
7	05	31,25	08	50,00
8	05	31,25	05	31,25
9	07	43,75	08	50,00
10	04	25,00	06	37,50
11	04	25,00	05	31,25
12	05	31,25	08	50,00

Source: The authors (2012).  
Legend: † None of the participants had BP <140/90 mmHg or DBP <90 mmHg at the first assessment.

As shown in Table 2, the proportion of subjects with blood pressure control ranged from

12.5% to 43.75%. The absolute increase in the percentage of users with pressure control, the first month of the last follow-up was 13%. When analyzed the control pad, the percentage doubled from the first to the last month of monitoring.

The findings regarding the characterization of the sample in this study corroborates other research on the topic, which identify women, married, over 50 years old, with primary and secondary income from 1 to 3 minimum wages, mostly retired or home and with the same risk factors also consistent. Regarding the knowledge of pathology, participants had difficulties in delivering a concept of HA, similar to that observed in the study Pinotti, Mantovani and Giacomozzi.<sup>9</sup>

The meaning of "bad" to have hypertension was related to reasons such as need to stop doing things they enjoyed; need to take daily medications, symptoms and complications of the disease and the inability to work. Since individuals with hypertension, most often, chronicles more difficult when the disease interferes in what you generate satisfaction, a situation that must be considered to achieve better understand this feeling and realize the impact of the disease on their daily lives.

With nursing home care, there was a change in relation to knowledge about the chronicity of the disease, because early participants believed that the disease had healing. There was also an increase in responses related to the difficulty in treating drug and non-drug. With regard to non-medication treatment, another study emphasized that adherence to low sodium diet was the most difficult of respondents.

It is inferred that the increase in participants' knowledge about the chronic nature of the disease, may have increased the number of



Gaio DM, Ulbrich EM, Mantovani MF *et al.*

*Importance of nursing care...*

people adherent to antihypertensive treatment, the result of educational activities during home care, which may explain the increased reports of difficulties in managing it.

Corroborating this argument, Faé *et al.*<sup>12</sup> found that patients who were adherent to antihypertensive treatment had greater knowledge about medication and non-medication than non-members. And a study of 511 patients treated at a League of Hypertension of a government teaching hospital in São Paulo, concludes that patients in outpatient, with knowledge that the treatment of hypertension includes weight reduction, were with more controlled blood pressure.<sup>13</sup>

In referring to hospitalizations, decreased significantly ( $p = 0.001$ ) at follow-up nursing home care. Simonetti, Batista and Carvalho<sup>14</sup>, found that the most prevalent cause of hospital admissions for patients with hypertension was the elevation of blood pressure, with 21.8%. This rate is higher than that observed after the follow-up period of the 16 participants was 12.5%.

In respect to blood pressure control, there is no statistically significant difference between the mean SBP and DBP in periods. There is after the monitoring period, a reduction of 6 mmHg for SBP and an increase of 1 mmHg in DBP. The reduction achieved with home care was similar to the estimated reduction in SAP with non-pharmacological interventions presented by the Brazilian Cardiology.

The proportion of participants who achieved the targets for blood pressure control increased from 18.75% to 31.25% and for the control of diastolic blood pressure of 25% to 50%. The prevalence of participants with controlled blood pressure at the start of follow-up was similar to the national (18.75% versus 19.6%) and

at final follow-up, the prevalence of this control was higher than the national rate (31.25% vs. 19.6%)<sup>2</sup> and Sao Paulo (31.25% versus 22%).

The prevalence of participants with controlled blood pressure at the end of next up was the result of Nogueira *et al.*<sup>5</sup> study, which surveyed 2383 people, of which 740 were classified as hypertensive. The rate of blood pressure control was 30%. Similar rate was found in the study by Coelho *et al.*<sup>15</sup>. The authors studied 245 patients treated at a clinic hypertension in a university hospital and grouped us regulars in the outpatient or absent. In the group of regulars the rate of blood pressure control was 30% versus 8% in the group of absentees. In the district of Wuhan, China, the prevalence of hypertension control was greater than that observed in this study, with a rate of 46.9%.

The study Mantovani, and Mottin Rodrigues<sup>8</sup> reinforces the benefit of educational activities developed at home to patients with hypertension and their families. The authors concluded that in the group receiving monthly visits in the presence of a family member, a greater control of the levels of Mean Arterial Pressure (MAP), which remained parameters of blood pressure within the normal range in 43% of participants and others reduced to 43% less than 110 mmHg, while the group that received two-monthly visits, called control group, 28% of subjects remained with MBP levels above normal and only 55% remained as the pressure levels at baseline.

It is observed that there was an improvement in the number of users who had elevated DBP in the sample selection in relation to follow-ups. From the second follow-up has already occurred reduction in the percentage of participants who were able to reduce blood pressure levels. Also, we can see that even with a

Gaio DM, Ulbrich EM, Mantovani MF *et al.*

*Importance of nursing care...*

period of six months without follow up, the number of users who have managed to maintain levels of DBP below 90 mmHg in return was the same as in the last meeting.

The practice of nursing home care not only allowed the user to access the service of primary health care from their need, but be contacted on a scheduled basis. Moura et al.<sup>17</sup>: 764, analyzed the publications on the practice of nursing care to patients of hypertension between the period 1998 to 2008 and expressed their concern: "[...] the way it was reported the nursing consultation that is, unsystematic, individualized and still centered on the medical hegemonic".

The authors op cit. recommended as a strategy to change this paradigm the emphasis on nursing strategies that enhance the other, whether at home, in group activities or in health facilities, promoting greater adherence to the treatment of hypertension. Thus, the strategy of home care, from the results presented, demonstrates synergy with the subjective paradigm.

occurrence of type II error. With the occurrence of this type of error differences between the estimated averages for SBP and DBP may not have been identified by the statistical test used.

We suggest the development of more studies that address the home care because there are few published studies that used this practice to evaluate its effectiveness in improving the quality of life of the population, with study designs and appropriate statistical tests, which did not was possible in this study to use a database for collection of variables.

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CONCLUSION

It was found that home monitoring was effective to help people with high blood pressure to control blood pressure levels. Monitoring enabled the home team to work according to the social and economic reality of each, as well as learn about the beliefs, customs, values and way of life of the same. Thus, there was an increase in knowledge and attitudes adopted towards the disease, essential condition for which treatment is really effective.

A limitation of this study points to the sample size, which makes it vulnerable to the



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