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Effectiveness of education in health in the non-medication treatment of arterial hypertension

Eficácia da educação em saúde no tratamento não medicamentoso da hipertensão arterial

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Keywords

Primary health care; Health education; Efficacy; Hypertension; Health promotion

Descritores

Atenção primária à saúde; Educação em saúde; Eficácia; Hipertensão; Promoção da saúde

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Abstract

Objective: To verify the efficacy of health education on the adherence to non-pharmacological treatment in arterial hypertension.

Methods: Habits related to nutrition, physical activity and use of tobacco and alcohol were analyzed, as well as assessment of anthropometric and blood pressure levels, before and after the performance of group health education in 216 hypertensive patients.

Results: There was a statistically significant change in the consumption of legumes, in the adherence to physical activity, in the reduction of body mass index and abdominal circumference, and in the control of arterial pressure, after the health education groups.

Conclusion: The proposed health education was effective in incentivizing the adherence to non-pharmacological treatment in arterial hypertension, evidenced by the relevance of the adoption of these educational strategies for health professionals.

Resumo

Objetivo: Verificar a eficácia da educação em saúde na adesão ao tratamento não medicamentoso da hipertensão arterial.

Métodos: Foram analisados hábitos referentes à alimentação, à atividade física e ao uso de tabaco e álcool, bem como avaliação de medidas antropométricas e níveis pressóricos, antes e após a realização de grupos de educação em saúde em 216 hipertensos.

Resultados: Houve mudança estatisticamente significativa no consumo de legumes, na adesão à prática de atividade, na redução do índice de massa corpórea e da circunferência abdominal e no controle da pressão arterial, após os grupos de educação em saúde.

Conclusão: A educação em saúde proposta foi eficaz no incentivo à adesão ao tratamento não medicamentoso da hipertensão arterial, evidenciando a relevância da adoção dessas estratégias educacionais pelos profissionais de saúde.

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Introduction

Systemic arterial hypertension is a grave public health problem, considered one of the principle risk factors for cardiovascular diseases, and responsible for high rates of morbidity.⁽¹⁾ Its control depends on pharmacological and nonpharmacological measures. The nonpharmacological measures are indiscriminately indicated for the hypertensive patients.⁽¹⁾ These measures include the reduction of alcohol consumption, control of obesity, a balanced diet, a regular practice of physical activity, and tobacco cessation.^(1,2)

Adherence to these lifestyle habits favors the reduction of blood pressure levels and contributes to the prevention of complications.⁽¹⁾ However, it is estimated that only a third of people monitored in health services have their arterial blood pressure maintained at desirable levels, and that insufficient treatment adherence is identified as one of the important determinants of this disease.⁽³⁾ The family health teams have, in theory, the best conditions to promote adherence to treatment of diseases such as hypertension, because they stimulate a good user/professional relationship and encourage co-responsibility for treatment. The educational activities promoted by the professionals stimulate the development of individual autonomy and enables the discussions and guidelines on how to adopt new lifestyle habits.⁽⁴⁾

The objective of this study was to verify the efficacy of proposed health education on adherence to nonpharmacological treatment of arterial hypertension in patients enrolled in family health teams.

Methods

This was an interventional, randomized, uncontrolled, prospective cohort study. The population consisted of 261 hypertensive patients enrolled in family health units in the urban area of the municipality of Januária, in the state of Minas Gerais, southeastern region of Brazil, who were older than 18 years of age. Excluded from the study were those hypertensive patients who refused to participate in

educational activities. The outcome variables used were physical activity, diet, smoking, alcoholism and sociodemographic data. The sample size was estimated to detect a difference of at least 30% in the control of arterial hypertension after the educational activities, in relation to an estimated ratio of 50% of people with controlled arterial pressure before initiating the work. A confidence level of 95% and a sample power of 80% was assumed.

For purposes of data collection, home visits were conducted before the health education activities. The first visit was executed with the aim of applying the individual adult type questionnaire recommended by the *National Cancer Institute* – NCI,⁽⁵⁾ in order to gather information about the outcome variables.

After the home visits, the educational intervention was performed. The activities were conducted, by means of dialogued exposition, specific written material, sharing experience and evaluation, all performed in regular encounters lasting 60 minutes and with participation of 12 to 15 people. The programmatic content was: diet (*Dietary Approaches to Stop Hypertension* - DASH),⁽⁶⁾ physical activity (*International Physical Activity Questionnaire* - IPAQ),⁽⁷⁾ abdominal circumference (normal: up to 88 cm - women; 102 cm - men),⁽⁸⁾ body mass index (normal <25, overweight ≥ 25 and <30, obese ≥ 30),⁽⁹⁾ reduction of the consumption of alcohol and tobacco. The level of arterial pressure gauged was classified as optimum / normal / borderline, hypertension stage one and two, and hypertension stage three / isolated arterial systolic hypertension.⁽¹⁾

The variables of weight and arterial blood pressure were assessed in a standardized manner before and after each educational activity. Three months after the last activity on health education, a home visit was conducted to collect data, in order to evaluate possible changes occurred during the research process.

For descriptive analysis, the sociodemographic and clinical variables were listed.

In the analysis of categorical variables, the Chi-square of *McNemar* was used, in order to evaluate the paired data before and after the process of health education. Data analysis was performed using the software *Statistical Package for the Social Sciences* - SPSS® 15.0 for Windows®.

The development of the present study met the national and international standards of ethics in research involving humans.

Results

The characteristics of the study participants are provided in Table 1.

Table 1. Characteristics of the research population.

Variables	n(%)
Gender	
Feminine	171(79.2)
Masculine	45(20.8)
Age range (in complete years)	
Less than 40	5(2.3)
40 to 49	19(8.8)
50 to 59	48(22.2)
60 to 69	72(33.3)
70 to 79	61(28.2)
80 years	11(5.1)
Marital status	
Single	19(8.8)
Married	138(63.9)
Divorced/separated	06(2.8)
Widowed	53(24.5)
Ethnicity / Skin color	
Yellow	08(3.7)
White	13(6.02)
Brown	149(68.98)
Black	46(21.30)
Educational level	
Illiterate	68(31.5)
Fundamental School Iw	108(50.0)
Fundamental School II	30(13.9)
Middle School	10(4.6)

There was a statistically significant change in the consumption of legumes, as measured by the proportions of appropriate use of this type of food before and after the educational intervention. There were no significant changes in relation to the consumption of fruits and vegetables (Table 2).

In relation to the practice of physical activity, a statistically significant improvement was observed

(Table 2). In the cessation of alcohol and tobacco, there were no positive changes observed. Regarding the anthropometric data, there was a statistically significant reduction in relation to abdominal circumference in relation to BMI (Table 2).

Table 2. Life habits

Variables	Before n(%)	After n(%)	p-value*
Consumption of fruits			NA**
Adequate	0(0)	03(1.4)	
Inadequate	216(100)	213(98.6)	
Consumption of vegetables			NA**
Adequate	1(0.5)	0(0)	
Inadequate	215(99.5)	216(100)	
Consumption of legumes			0.000
Adequate	186(86.1)	208(96.3)	
Inadequate	30(13.9)	08(3.7)	
Practice of physical activity			0.030
Very active / active	105(48.6)	102(47.2)	
Irregularly active A/B	67(31.0)	87(40.3)	
Sedentary	44(20.4)	27(2.5)	
Use of alcoholic beverages			0.815
Yes	32(14.8)	34(15.5)	
No	184(85.2)	182(84.3)	
Smoking			1.000
Yes	16(7.4)	17(7.9)	
No	200(92.6)	199(92.1)	
Abdominal circumference			0.000
Within limits	69(31.9)	84(38.9)	
Greater than limits	147(68.1)	132(61.1)	
Body mass index			0.018
Normal	64(29.6)	67(31.0)	
Overweight	94(43.5)	100(46.3)	
Obese	58(26.9)	49(22.7)	
Arterial Pressure			0.004
Optimum, normal & borderline	99(44.9)	144(76.6)	
HAS stage 1 and stage 2	73(33.8)	45(20.8)	
HAS stage 3 and isolated systolic	44(20.4)	27(12.5)	

Legend: (*) – Chi-square test of McNemar; (**) NA – not applicable

It was also possible to observe an improvement in blood pressure levels. The blood pressure measures encountered at the baseline were: SBP = 141.67 ± 23.94 mm/Hg and DBP = 81.94 ± 12.13 mm/Hg. At the end of the study, the observed values were 131.32 ± 21.63 mm/Hg and 81.76 ± 12.08 mm/Hg, respectively.

Discussion

The educational groups were characterized as a positive tool in incentivizing the appropriateness of certain behaviors and promoted improvement in blood pressure levels. However, the study results should be considered in light of some limitations. Examples of limitations are the short period of monitoring and the fact there was no control. It would be important to reevaluate the results over time, in order to ascertain whether the changes have been effectively incorporated into the patient's routine. It should be emphasized that the study, because it was not controlled, did not permit more evident inferences.

The health education was conceived from an initial objective, and with adequate planning and systematic methodology it gives rise to the attainment of good results. The results of this study show the importance of this strategy and the possibility for health professionals to make effective use of it in health promotion.

The predominance of females has been observed in other studies, as well as the prevalence of the age range between 60 to 79 years.⁽¹⁰⁻¹²⁾ The low educational level observed may impair behavior change by hampering the understanding of the orientations given, and therefore, it merits special attention from professionals.⁽¹³⁾

The *Dietary Approaches to Stop Hypertension* has had its benefits verified by other authors.⁽¹⁴⁾ Among the dietary habits discussed, consumption of legumes had a statistically significant change. Other studies have obtained a significant increase in intake of fruits and vegetables, after conducting educational activities.⁽¹⁵⁾ The modification of eating habits is not a simple task, because it is a custom present since childhood, re-

lated to ethnic origin and socioeconomic status of individuals.⁽¹⁶⁾

In relation to the practice of physical activity, there was a statistically significant improvement in the level of activities performed; several individuals who were sedentary began to practice physical exercises. The prevalence of physical activity and the impact of health education on a sedentary lifestyle are variable, according to the literature.^(17,18) The practice of physical exercise may be a behavior to which it is easier to adhere, since even activities performed during leisure time are associated with blood pressure control, but it is found that this practice is not a reality experienced by most hypertensive patients.^(19,20)

No changes were observed in the consumption of alcohol and tobacco. Different results were found by Al Qassim, where a 7% reduction in smoking among participants of a health education program was observed.⁽¹⁷⁾ Another study in Mexico observed association between these habits and the control of arterial pressure, thereby enhancing the benefits of adequate behavior.⁽²¹⁾

Changes in habits related to the use of tobacco and alcohol are difficult results to achieve in the short term, so it is essential to continue groups that reinforce the importance of these behaviors.

Research confirms that the more overweight, the higher the blood pressure levels.^(22,23) In this study we observed a statistically significant reduction in BMI values. In the abdominal circumference values, a statistically significant reduction was also obtained. A study of educational guidance, conducted with hypertensive patients, showed a reduction in abdominal circumference, body mass index and, consequently, in blood pressure levels.⁽²⁴⁾ The maintenance of these measures and of body weight is not an easy task; therefore, the conservation of healthy habits is necessary, such as the adoption of an adequate diet and the practice of regular physical activity.⁽²⁵⁾

In consonance with the changes in some lifestyle habits, we observed a statistically significant reduction in arterial pressure values, ratifying that the lifestyle of patients with arterial hypertension was related to the control of this condition.

New studies on the subject are desirable in order to identify the best intervention measures, in order to attain a greater commitment of patients and to obtain more effective results from the health promotion actions.

Conclusion

The health education proposed was effective in encouraging adherence to nonpharmacological treatment of arterial hypertension, demonstrating the relevance of adopting these educational strategies by health professionals.

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Collaborations

Oliveira TL participated in the project design, analysis, interpretation, drafting the article, critical revision of the content and final approval of the version to be published. Miranda LP collaborated with the project design, analysis and interpretation, drafting the article and final approval. Fernandes PS participated in the analysis, interpretation and writing of the article. Caldeira AP participated in the project design, analysis, interpretation, drafting the article, critical revision and final approval of the content.

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