



Brief report

Benefits of an educational intervention on diet and anthropometric profile of women with one cardiovascular risk factor[☆]



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ABSTRACT

Background and objective: To assess whether an educational intervention in perimenopausal women with hypertension, diabetes mellitus and/or dyslipidaemia would improve adherence to a Mediterranean diet pattern and achieve changes in anthropometric parameters.

Patients: Randomized clinical trial of parallel groups: 320 women (45–60 years) in 2 urban primary care services. Variables studied: hip and waist circumference, body mass index (BMI), total, visceral and trunk fat (bioimpedance measures) and adherence to Mediterranean diet (MEDAS-14 questionnaire). Intervention group: 3 interactive workshops on prevention of cardiovascular disease, and control group: information by post.

Results: Two hundred and thirty women completed the study (113 control group and 117 intervention group). The differences between groups were significant in all parameters one year later. In the intragroup comparison, the intervention group maintained their BMI and improved adherence to the Mediterranean diet. The control group increased their BMI, abdominal and hip circumference and fat parameters (total, visceral and trunk fat).

Conclusions: A simple educational intervention in perimenopausal women with cardiovascular risk can improve their healthy habits.

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Beneficios de una intervención educativa en la dieta y en el perfil antropométrico de mujeres con un factor de riesgo cardiovascular

RESUMEN

Fundamento y objetivo: Evaluar si una intervención educativa en mujeres perimenopáusicas con hipertensión, diabetes mellitus y/o dislipidemia sería capaz de mejorar la adherencia a un patrón de dieta mediterránea y conseguir cambios en parámetros antropométricos.

Pacientes: Ensayo clínico aleatorizado de grupos paralelos: 320 mujeres (45–60 años) de 2 servicios de atención primaria urbanos. Variables a estudio: perímetro abdominal y de cadera, índice de masa corporal (IMC), grasa corporal total, visceral y de tronco (medidas con bioimpedancia) y adherencia a dieta mediterránea (cuestionario MEDAS-14). Grupo intervención: 3 talleres interactivos sobre prevención de enfermedad cardiovascular, y grupo control: información por correo.

Palabras clave:

Educación en salud

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Resultados: Concluyeron el estudio 230 mujeres (113 en el grupo control y 117 en el grupo intervención). Un año después, las diferencias entre grupos fueron significativas en todos los parámetros. En la comparación intragrupos, las mujeres del grupo intervención mantuvieron el IMC y mejoraron la adherencia a la dieta mediterránea. El grupo control aumentó el IMC, el perímetro abdominal y de cadera y los parámetros de grasa (corporal total, visceral y tronco).

Conclusiones: Una sencilla intervención educativa en mujeres perimenopáusicas con riesgo cardiovascular puede mejorar sus hábitos saludables.

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Introduction

In recent years, cardiovascular disease (CVD) has been the leading cause of death in women in our country.¹ The transition to menopause produces an acceleration of cardiovascular risk factors, such as increased abdominal obesity and alterations in body composition.² Eating habits have a crucial role in these two aspects, and, in this sense, the Mediterranean diet has proved to be one of the healthier eating models.³

The aim of this study was to assess whether an educational intervention in women of perimenopausal age with hypertension, diabetes mellitus and/or dyslipidaemia would be able to improve adherence to a Mediterranean diet pattern and obtain changes in certain anthropometric parameters.

Materials and methods

A randomized parallel group clinical trial was conducted with an educational intervention in 2 of the 5 health centres located in the city of Ourense so as to facilitate the patient selection process. These 5 centres provide care to a total population of 14,455 women with a health card, aged between 45 and 60 years. The sample size was calculated by estimating a standardized difference in mean systolic blood pressure of 4.76 mmHg between the intervention and control groups. Whereas the expected standard deviation in this parameter was 15.2 mmHg, for a confidence level of 95% and a power of 80%, a sample of 320 women was needed, allowing for a loss rate of 30%.

Women who had at least one diagnosed cardiovascular risk factor (diabetes mellitus, dyslipidaemia and/or hypertension), excluding those who refused to participate in it and/or those who had a mental condition that would advise against their participation. The study was approved by the Clinical Research Ethics Committee of Galicia.

The variables studied were: age, waist and hip circumference, body mass index (BMI) and, finally, parameters related to body fat (total, visceral and trunk). The latter criteria were analyzed with a bioelectrical bioimpedance device, Tanita SC-330. The conditions required for the measurement of these parameters were: having an empty bladder before measurement, not having done any physical activity for 12 h, removing all kinds of metal objects or jewellery that may interfere with the measurement results and wearing light clothing. Menopausal status was assessed by self-report on the regularity of their menstrual cycle. Were considered menopausal those women whose menstruation had stopped for more than a year. The MEDAS-14 questionnaire about adherence to the Mediterranean diet was used to assess eating habits.^{4,5}

Once the questionnaires and tests were performed on the entire sample, an automatically generated randomization list was used to assign patients to one of the 2 groups. This list was prepared by an external collaborator, unfamiliar with the study (technician from the Research Unit of the Cristal-Piñor Hospital of Ourense). The sample was divided into intervention and control group. Women

in the intervention group received 3 interactive educational workshops on the prevention of CVD, recommending the adoption and maintenance of healthy habits that favour a change in lifestyle. The importance of following a Mediterranean diet was stressed, reducing consumption of saturated fats, sugar and alcohol and increasing consumption of plant foods and foods rich in polyunsaturated fatty acids.^{3,5} 3 workshops were held over a week, with a duration of 1.5 h each, in groups of 15 people. To encourage interaction and participation of women, these workshops were organized on different days and times. Moreover, the control group received only a brochure mailed to their address, with information on the same subject. 12 months after the workshops were completed, the questionnaire and anthropometric assessment was repeated on the entire sample.

Statistical analysis

The Lilliefors test was carried out to evaluate the normality of continuous variables. McNemar's test and Chi square were used for pre-post-intervention comparison between categorical variables; the Student t test for independent samples and paired data was used for the study of continuous variables, and in the case of not presenting a normal distribution, the non-parametric Wilcoxon test was used. Analyses were performed with R free software.

Results

Of the 320 women who started the study, 230 completed it. In the control group 47 subjects were lost ($n = 113$) and 43 in the intervention group ($n = 117$); therefore, the loss percentage was 28.1%. After studying the characteristics of patients lost during the study, there was no pattern observed which would explain these losses. The average age of the sample was 53.17 ± 4.31 years and the vast majority of women (63.48%) were menopausal at baseline.

Initially the homogeneity of the sample was verified after randomization of women in the 2 groups, with no statistically significant differences between the control group and the intervention group (Table 1). However, one year after the training, the difference between the two groups was significant in all the variables of the study (Table 1).

Regarding the intragroup differences, we observed that women in the control group before the educational intervention presented a BMI of 27.34 ± 5.30 kg/m². After the intervention, this increased significantly to 27.81 ± 5.48 kg/cm² ($p = 0.000$). Women in the intervention group had a BMI of 27.57 ± 5.52 kg/cm², and a year later their BMI was 27.69 ± 5.81 kg/cm², the difference not being statistically significant ($p = 0.271$) (Table 2).

A year after the educational intervention, women in the control group significantly increased the parameters of total body fat, visceral fat, trunk fat and waist and hip circumference ($p < 0.001$). Women in the intervention group significantly increased only the amount of visceral fat ($p = 0.028$) (Table 2).

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