Changes in the lifestyle of physician care professionals after participating in a course on obesity care

Mudança no estilo de vida dos profissionais da atenção básica após participação em curso sobre o cuidado da obesidade

Ivanildo Ribeiro Domingos Júnior[1], Nathália Paula de Souza[2,] Amanda Tayná Tavares de Figueiredo Gadelha[3], Renata Kelly Gomes Oliveira[4], Vanessa Sá Leal[5], Pedro Israel Cabral de Lira[6].

[1] PhD student at the Federal University of Pernambuco, Department of Nutrition, Health Sciences, Center, Recife (PE), Brazil; [2] Professor and PhD student at the Federal University of Pernambuco, Academic Center of Vió**r**ia (PE), Brazil; [3] PhD student at the Federal University of Pernambuco, Department of Nutrition Health Sciences Center, Recife (PE), Brazil; [4] Resident in Nutrition at the Federal University of Pernambuco, Barão de Lucena Hospital, Recife (PE), Brazil; [5] Professor and PhD at the Federal University of Pernambuco, Viória Academic Center (PE), Brazil; [6] Professor and PhD in Medicine at the Federal University of Pernambuco, Department of Nutrition, Health Sciences Center, Recife (PE).

*Corresponding author:Ivanildo Ribeiro Domingos Júnior – *Email*: ivanildo.ribeiro@ufpe.br

ABSTRACT

To evaluate the changes in the lifestyle of health professionals after participating in a course focused on the care of people with obesity. Quasi-experimental study, with consecutive series method, with health professionals from primary care in Pernambuco as target audience. The intervention group (IG) was composed of professionals who attended the ECOASUS-PE project improvement course. A total of 109 professionals participated in the study, 51 from IG and 58 from control group (CG). At the end of the course, the IG had an improvement in lifestyle ($p=0.007$), a reduction in the smoking habit ($p=0.027$) and changes in alcohol consumption ($p=0.031$) and eating habits ($p=0.036$). Participation in the ECOASUS-PE course generated positive changes in the professionals' lifestyles. With this, it is expected that caring for those who care is an indispensable condition for qualifying the care of SUS users.

Keywords: Healthcare Professional. Lifestyle. Obesity. Self Care.

RESUMO

Avaliar as mudanças no estilo de vida de profissionais da saúde após a participação em curso voltado ao cuidado de pessoas com obesidade. Estudo do tipo quase experimental, com método de série consecutiva, tendo como público-alvo os profissionais da saúde da atenção básica de Pernambuco. O grupo intervenção (GI) foi composto pelos profissionais que realizaram o curso de aperfeiçoamento do projeto ECOASUS-PE. Participaram do estudo 109 profissionais, sendo 51 do GI e 58 do GC. Ao final do curso, o GI apresentou melhora no estilo de vida ($p=0,007$), redução no hábito de fumar ($p=0,027$) e mudanças no consumo do álcool ($p=0,031$) e nos hábitos alimentares ($p=0,036$). A participação no curso ECOASUS-PE gerou mudanças positivas no estilo de vida dos profissionais. Com isso, espera-se que o cuidado com quem cuida seja uma condição indispensável para qualificação do cuidado de usuários do SUS.

Palavras-chave: Autocuidado. Estilo de Vida. Obesidade. Profissional da Saúde.

INTRODUCTION

Excess weight has been growing worldwide and is a public health problem, as it is associated with various diseases and is associated without the complete elimination of old problems, as it occurs paradoxically with current pandemics such as malnutrition, hunger and poverty. The synergy of these epidemics linked to climate change, often aggravated by the overproduction of ultra-processed foods, and occurring in the same time and space contribute to the Global Syndemic.[1] According to the WHO, Brazil had around 75.0% of deaths caused by chronic non-communicable conditions (CCNTs) in 2022, corresponding to one million and sixty-seven thousand deaths, no different from the world average (74.0%). [2]

Having a healthy lifestyle influences the improvement of people's health and well-being, and is necessary for the prevention of complications and the care of people living with NCDs. [3] These habits include alcohol abuse, smoking, excessive use of tea or coffee, as well as unhealthy eating and lack of physical exercise, which have a major influence on the general health of individuals.[4] Maintaining these healthy habits are some of the factors that protect health, especially against NCDs. [3, 5]

When analyzing 521 health professionals living in medium-sized cities in southeastern Brazil, 71.3% were found to be overweight, with 33.9% being obese, which is associated with an inadequate lifestyle.[6] In a study of 154 professionals who worked in pre-hospital care in the city of São Paulo, a prevalence of systemic arterial hypertension of 33.0% was observed, with 11.0% of these professionals having fasting glycemia $>$ 110mg/dL, the same study identified inadequate lifestyle behaviors among these professionals, with 20.1% being smokers, 47.0% abusing alcoholic beverages, 64.0% being sedentary and 66.0% being overweight.[7] The Atlas of the Food and Nutrition Situation in Pernambuco,[8] recently found that 61.0% of women aged between 20 and 59 were overweight, with 25.9% classified as obese. In men of the same age, the prevalence was 56.1% overweight and 19.6% obese, very similar figures among health professionals.

The impact of the Covid-19 pandemic has shown that healthcare workers have stopped or reduced their physical activity and increased their consumption of carbohydrates, which increases their propensity to gain weight, as well as compromising their immunity and making them more exposed to infections. [9] The switch from main meals to quick snacks, coupled with the increase in the use of delivery apps, has negatively affected the health of health professionals, given that the nutritional composition of the food and drink available is mostly ultra-processed. [10]

One of the main ways of caring for people with obesity and NCDs is through the educational practices in health in the SUS provided for by the National Policy for Permanent Education in Health (PNEPS), which has the potential to qualify the work carried out in Primary Care (PC) and is fundamental for health promotion and qualification of care and for the self-care of professionals.[11]

Qualification courses, educational activities and sharing knowledge and practices in primary care are strategies for preventing and caring for people with obesity. This interdisciplinary construction can be carried out with matrix support, which aims to implement active communication spaces for the integration of knowledge. [12] Thus, the aim of this study is to assess changes in the lifestyle of PHC professionals after taking part in a course on caring for people with obesity.

METHODS

This is a quasi-experimental study, using the consecutive series method to allocate the participants to the groups. This study is linked

to the project «Training Processes for Coping with and Controlling Obesity within the SUS in Pernambuco (ECOASUS - PE)», under CNPq/MS/SAS/DAB/CGAN Call No. 26/2018, and will be carried out from June 2021 to January 2022.

Due to the logistics of the training course, health professionals registered for the course and were invited to take part in the research by signing the free and informed consent form (FICF). The professionals who completed the course in full were considered eligible to join the intervention group (IG) and the professionals who dropped out of the course before starting, without receiving any information, were considered eligible for the control group (CG) as shown in figure 01.
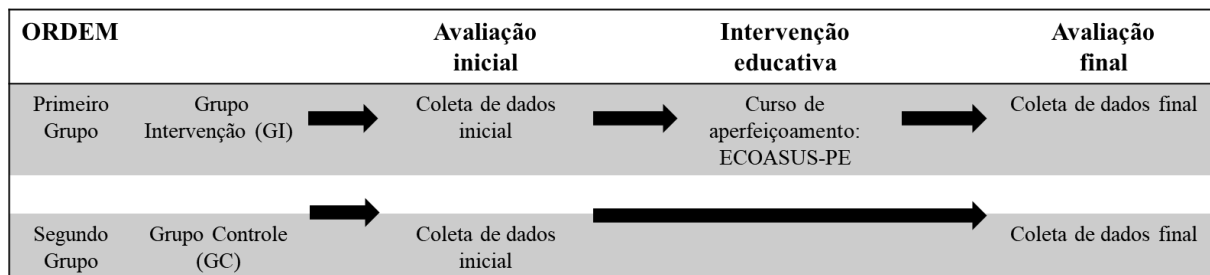
ORDEM		Avaliação inicial	Intervenção educativa	Avaliação final
Primeiro Grupo	Grupo Intervenção (GI)	Coleta de dados inicial	Curso de aperfeiçoamento: ECOASUS-PE	Coleta de dados final
Segundo Grupo	Grupo Controle (GC)	Coleta de dados inicial		Coleta de dados final

Figure 01. Quasi-experimental study design using pre-intervention and post-intervention design with two groups (intervention - IG and control - CG) with no randomization between the groups.

Source: Own Authorship, 2023.

In this study, the target audience was health professionals with a university degree, preferably linked to the expanded family health nucleus (NASF-AB), eSF teams and primary care teams (eAB) in municipalities in Pernambuco. The sample size was calculated using the equation for two experimental proportions, considering a 95% confidence level and a test power of 80%. The expected prevalence of healthy lifestyles was 0.50 in the control group, i.e. a change of 50% was expected, and 0.76 in the intervention group, i.e. a change of more than 75% was expected for the professionals who completed the ECOASUS-PE project course, resulting in a final increase of 25%. Thus, the sample size required for each group is 51 people, totaling a minimum of 102 observations in the sample.

The course taken by the IG was entitled «Confronting and Caring for Obesity in Primary Care in Pernambuco». The training course lasted 180 hours, spread over six months, and was carried out remotely through a Virtual Learning Environment (VLE). [13] The content was divided into six modules, published in two books [14,15], with the following themes: «Social and commercial determinants of health and their relationship with obesity», «Food systems: conceptual approach and their implications for health», «Food Guide for the Brazilian Population as a tool for promoting healthy eating», «A systemic view of obesity based on interprofessionality: education strategies and integrative and complementary health practices», «Behavioral approach: motivational stages and strategies for changing eating behavior» and finally, «Public equipment for health promotion with emphasis on the Health Academy Program and the Health at School Program».

Data was collected using an electronic questionnaire containing socioeconomic, demographic and lifestyle questions, self-perceived health and self-reported weight (kg) and height (m). Googleforms was used to make the questionnaire available on the AVA, and it was also sent to the participants by e-mail and messaging applications. The questionnaires were sent out twice, before starting the course and after it had finished for both groups.

Weight and height data were used to calculate BMI and classified according to the WHO. 16 With regard to lifestyle variables, questions relating to physical activity, alcohol consumption and smoking were analyzed, as well as the eating habits of each professional.

Health professionals who self-reported not doing any activity were classified as «inactive» and the others were classified according to the cut-off point established by the 2018 Physical Activity Guidelines for Americans: a) light to moderate activities between 150 min (2h:30min) and 300min (5h) per week, b) intense activities for at least 75 minutes (1h:10min) to 150 minutes (2h:30min) per week. Those within this threshold were classified as «physically active», those below this threshold were classified as «insufficiently active» and when this cut-off point was exceeded they were considered «very active». [17]

Self-reported alcohol consumption was considered abusive when it was equal to or greater than five or more doses for men or four or more doses for women, at least once in the last 30 days. [18,19] Smokers were classified as those who self-reported having a smoking habit at the time of the survey, regardless of the number, frequency and duration. [18,19]

Food consumption was assessed using a self-administered food assessment scale, according to the recommendations of the Dietary Guidelines for the Brazilian Population, consisting of 24 questions that investigate food choice, eating habits, household organization and planning, and the frequency of consumption of certain foods. When answering this questionnaire, the participant is classified as having: a) inadequate eating habits; b) eating habits at risk; c) healthy eating habits.[20] In order to carry out the statistical analysis of changes in eating habits in isolation, before and after the course, the answers to the questionnaire were transformed into bivariate, combining «strongly agree» with «agree» and the second combining «strongly disagree» and «disagree».

To construct the lifestyle, a score was created using the variables relating to eating habits, physical activity, alcohol consumption and smoking. A point was then assigned to each component of the healthy lifestyle and when the sum of these points was equal to or greater than 3, the health professionals were considered to have a healthy lifestyle.

. The Statistical Package for the Social Sciences - SPSS, version 19.0 and Epi info, version 6.0 were used for data processing and analysis. To characterize the sociodemographic profile of the health professionals, descriptive analyses were carried out, such as frequencies and percentages, and the distributions of the qualitative variables were constructed. To analyze changes in the eating habits of health professionals who took part in the ECOASUS-PE course, a contingency table was constructed for each item in the instrument. The MCNeymar test was used to compare the distribution of eating habits between before and after the course. In all the comparative analyses between the beginning and end of the ECOASUS-PE course, in each group analyzed and between the groups analyzed, the chi-square test for homogeneity was applied, using 5% as the significance level (p error ≤ 0.05).

This project was submitted to and approved by the UFPE/CAV Research Ethics Committee, under the Certificate of Submission for Ethical Appraisal - CAAE: 5141621.2.0000.9430, in compliance with the precepts of ethics in research involving human beings, in accordance with Resolution 466/12 of the National Health Council.

RESULTS

A total of 109 health professionals took part in the study, of which 51 completed the ECOASUS-PE course, making up the intervention group (IG), and 58 registered but did not take part in the course, making up the control group (CG).

Of these professionals, 45.9% were nutritionists, 13.8% physical education professionals, 11.0% psychologists, 10.1% nurses, 6.4% social workers, 5.5% physiotherapists and the rest amounted to 7.3%, including speech therapists, occupational therapists, sanitarians, dentists and veterinarians.

Table 01 shows that the majority of professionals were female and that the IG and CG had similar characteristics, except for the level of training (p=0.012) and self-perception of mental health (p=0.006).

Table 01. Characterization of the sociodemographic profile, nutritional status, self-perception and lifestyle of health professionals belonging to the IG and CG during the course of the ECOASUS-PE project, Brazil, 2021/22.

(Continued)

Variable	GI (n= 51) N (%)	GC (n= 58) N (%)	p-value	Variable	GI (n= 51) N (%)	GC (n= 58) N (%)	p-value
Sex			0,093[1]	**Self-perceived health**			0,090[1]
Male	4 (7,8)	11 (19,0)		Very good / Good	31 (60,8)	44 (75,9)	
Female	47 (92,2)	47 (81,0)		Fair / bad / Very bad	20 (39,2)	14 (24,1)	
Age			0,133[1]	**Self-perceived level of physical activity**			0,286[1]
20-29	15 (29,4)	21 (36,2)		Very good / Good	18 (35,3)	23 (39,7)	
30-39	15 (29,4)	19 (32,8)		Fair	22 (43,1)	17 (29,3)	
40-49	18 (35,3)	10 (17,2)		Bad / Very bad	11 (21,6)	18 (31,0)	
50+	3 (5,9)	8 (13,8)		**Self-perceived of diet**			0,179[1]
Skin Color			0,689[1]	Very good / Good	37 (72,5)	35 (60,3)	
White	19 (37,3)	25 (43,1)		Fair / bad / Very bad	14 (27,5)	23 (39,7)	
Black	6 (11,8)	5 (8,6)		**Self-perceived health mental**			0,006[1]
Brown	22 (43,1)	26 (44,9)		Very good / Good	19 (37,3)	32 (55,2)	
Other	4 (7,8)	2 (3,4)		Fair	28 (54,9)	15 (25,9)	
Family income*			0,662[1]	Bad / Very bad	4 (7,8)	11 (18,9)	
Up to 3 MW	17 (34,0)	22 (40,0)		**Self-perception of lifestyle**			0,595[1]
More than 3 MW up to 4 MW	18 (36,0)	15 (27,3)		Very good / Good	35 (68,6)	37 (63,8)	
Over 4 MW	15 (30,0)	18 (32,7)		Fair / bad / Very bad	16 (31,4)	21 (36,2)	
Work area			0,171[1]	**Nutricional status -BMI**			0,741[1]
Urban	48 (94,1)	50 (86,2)		Underweight	1 (2,0)	1 (1,7)	
Countryside	3 (5,9)	8 (13,8)		Adequate Weight	32 (62,7)	30 (51,7)	
Health Macro-region			0,988[1]	Overweight	13 (25,5)	19 (32,8)	

(Conclusion)

Variable	GI (n= 51) N (%)	GC (n= 58) N (%)	p-value	Variable	GI (n= 51) N (%)	GC (n= 58) N (%)	p-value
Metropolitan	25 (49,0)	27 (46,6)		Obesity	5 (9,8)	8 (13,8)	
Harsh	18 (35,3)	20 (34,5)		**Alcohol consumption**			0,152[1]
Backlands	3 (5,9)	4 (6,8)		Does not consume	28 (54,9)	22 (37,9)	
Vale do São Francisco e Araripe	5 (9,8)	7 (12,1)		Moderate use	17 (33,3)	23 (39,7)	
Undergraduate			0,012[1]	Abusive use	6 (11,8)	13 (22,4)	
Graduate	6 (11,8)	20 (34,5)		**Smoker**			0,090[1]
Specialization / Residency	35 (68,6)	33 (56,9)		Non-smoker	45 (88,2)	58 (100)	
Master´s / Docutorate	10 (19,6)	5 (8,6)		Smoker	6 (11,8)	0 (0,0)	
Participated in training on obesity			0,665[1]	**Level of physical activity**			0,698[1]
Yes	16 (31,4)	16 (27,6)		Inative	14 (27,6)	14 (24,1)	
No	35 (68,6)	42 (72,4)		Insufficiently ative	8 (15,7)	6 (10,3)	
Eating habites			0,630[1]	Active	8 (15,7)	8 (13,8)	
Adequate	5 (9,8)	4 (6,9)		Very Active	21 (41,2)	30 (51,8)	
At risk	13 (25,5)	19 (32,8)					
Inadequete	33 (64,7)	35 (60,3)					

IG: Intervention group; CG: Control group; MW= Minimum Wage ; *N= 105.
[1]p-value of the Chi-squared test for homogeneity;

Table 02 shows that at the start of the course, the majority of GI health professionals reported that they had a good self-perception of health (60.8%) and after the course there was a significant increase in this percentage (80.4%; p=0.049). Other differences were observed such as a reduction in smoking (Initial = 11.8%, Final = 0.0%; p=0.027) and an improvement in healthy lifestyle (Initial = 74.5%, Final = 90.2%; p= 0.007) at the end of the course. Also in table 02, the difference in the distribution of excess weight at the end between the IG and CG was statistically significant (p=0.038). The same was true of alcohol consumption (p=0.031), eating habits (p=0.036) and lifestyle (p=0.007).

Table 02. Distribution of nutritional status, self-perception and lifestyle of health professionals at the beginning and end of participation in the ECOASUS-PE project course, Brazil, 2021/22.

(Continued)

Factor evaluated	GI (N=51)		GC (N=58)		p-value[2]	p-value[3]
	Initial N (%)	Final N (%)	Initial N (%)	Final N (%)		
Self- perception of health					0,090[2]	0,569[3]
Very good / god	31 (60,8)	41 (80,4)	44 (75,9)	44 (75,9)		
Fair / Bad / Very bad	20 (39,2)	10 (19,6)	14 (24,1)	14 (24,1)		
p-value	0,049[1]		1,000[1]			
Self-perception of physical activity level					0,286[2]	0,818[3]
Very god / Good	18 (35,3)	19 (37,3)	23 (39,7)	21 (36,2)		
Fair	22 (43,1)	23 (45,1)	17 (29,3)	24 (41,4)		
Bad / Vary bad	11 (21,6)	9 (17,6)	18 (31,0)	13 (22,4)		
p- value	0,883[1]		0,351[1]			
Self-perception of diet					0,179[2]	0,617[3]
Very good / god	37 (72,5)	34 (66,7)	35 (60,3)	36 (62,1)		
Fair / Bad / Very bad	14 (27,5)	17 (33,3)	23 (39,7)	22 (37,9)		
p- value	0,667[1]		1,000[1]			
Self- percepition of health mental					0,006[2]	0,612[3]
Very god / Good	19 (37,3)	29 (56,9)	32 (55,2)	31 (53,4)		
Fair	28 (54,9)	18 (35,3)	15 (25,9)	19 (32,8)		
Bad / Vary bad	4 (7,8)	4 (7,8)	11 (18,9)	8 (13,8)		
p- value	0,126[1]		0,628[1]			
Self- perception of lifestyle					0,595[2]	0,192[3]
Very good / god	35 (68,6)	40 (78,4)	37 (63,8)	39 (67,2)		
Fair / Bad / Very bad	16 (31,4)	11 (21,6)	21 (36,2)	19 (32,8)		
p- value	0,262[1]		0,696[1]			
Overweight					0,234[2]	0,038[3]
Yes	18 (35,3)	18 (35,3)	27 (46,6)	32 (55,2)		
No	33 (64,7)	33 (64,7)	31 (53,4)	26 (44,8)		
p- value	1,000[1]		0,457[1]			
Alcohol consumption					0,144[2]	0,031[3]
Adequate	45 (88,2)	46 (90,2)	45 (77,6)	43 (74,1)		
Inadequate	6 (11,8)	5 (9,8)	13 (22,4)	15 (25,9)		
p- value	1,000[1]		0,828[1]			
Smoker					0,009[2]	NA
Non-smoker	45 (88,2)	51 (100,0)	58 (100,0)	58 (100,0)		
Smoker	6 (11,8)	0 (0,0)	0 (0,0)	0 (0,0)		
p- value	0,027[1]		NA			
Level of physical activity					0,354[2]	0,572[3]

(Conclusion)

Factor evaluated	GI (N=51)		GC (N=58)		p-value[2]	p-value[3]
	Initial N (%)	Final N (%)	Initial N (%)	Final N (%)		
Insufficiently ative	22 (43,1)	15 (29,4)	20 (34,5)	20 (34,5)		
Sufficiently ative	29 (56,9)	36 (70,6)	38 (65,5)	38 (65,5)		
p- value	0,149[1]		1,000[1]			
Eating habits					0,639[2]	0,036[3]
Healthy	33 (64,7)	38 (74,5)	35 (60,3)	32 (55,2)		
Unhealthy	18 (35,3)	13 (25,5)	23 (39,7)	26 (44,8)		
p- value	0,282[1]		0,573[1]			
Lifestyle					0,965[2]	0,007[3]
Healthy	38 (74,5)	46 (90,2)	43 (74,1)	40 (69,0)		
Unhealthy	13 (25,5)	5 (9,8)	15 (25,9)	18 (31,0)		
p- value	0,038[1]		0,537[1]			

[1]p-value of the Chi-square test for homogeneity (percentage per column);
[2] p-value of the comparison between the intervention group and the control group at the beginning of the course;

[3] p-value of the comparison between the intervention group and the control group at the end of the course; NA - Chi - square test not applicable; IG: Intervention group; CG: Control group.

According to figure 02, when comparing the practice of eating habits assessed between the times of the survey, there was a significant increase in the preference for eating organic fruit, vegetables and legumes, from 49.0% to 70.6% (p=0.007), as well as for the habit of eating fruit for breakfast, from 0.0% to 72.5% (p=0.001) in GI.
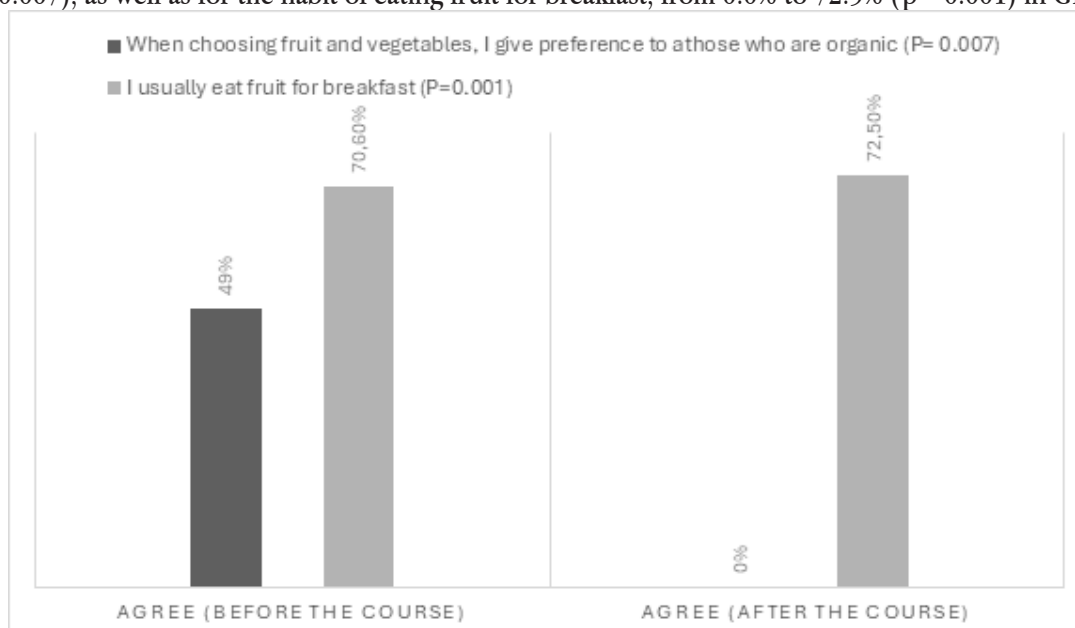

Figure 2. Change in the eating habits of health professionals participating in the intervention group during the course of the ECOASUS-PE project, Brazil, 2021/22.

[1]p-value of the MCNeymar test.

Table 03 shows an increase in the prevalence of healthy lifestyle habits among females (p=0.041), when comparing the beginning and end of the course. After the course, the prevalence of healthy lifestyles was higher among blacks, browns and others (100.0%; p=0.005) and females (93.6%; p=0.043). This shows that both the «female» sex and the «black, brown and other» professionals were more willing to change their lifestyles after the ECOASUS-PE course.

Table 03. Association of lifestyle with sociodemographic data, self-perception and nutritional status of health professionals participating in the intervention group during the ECOASUS-PE project, Brazil, 2021/22.

(Continued)

		Healthy lifestyle		
Variable		**Before the course N (%)**	**After the course N (%)**	**P-value**
Sex				0,041[3]
Male		2 (50,0)	2 (50,0)	
Female		36 (76,6)	44 (93,6)	
	P- value	0,266[2]	0,043[2]	
Age				0,265[3]
20-39		24 (80,0)	28 (93,3)	
40 +		14 (66,7)	18 (85,7)	
	P- value	0,282[1]	0,637[2]	
Skin color				0,329[3]
White		15 (78,9)	14 (73,7)	
Black / Brown / Other		23 (71,9)	32 (100,0)	
	P- value	0,743[2]	0,005[2]	
Family income*				0,833[3]
Up to 3 minimum wages		12 (70,6)	16 (94,1)	
More than 3 minimum wages		25 (75,8)	29 (87,9)	
	P- value	0,741[2]	0,650[2]	
Work área				0,533[3]
Urban		35 (72,9)	43 (98,6)	
Countryside		3 (100,0)	3 (100,0)	
	P- value	0,561[2]	1,000[2]	
Health macro-region				0,815[3]
Metropolitan / Hinterland		32 (74,4)	39 (90,7)	
Backlands /Vale do São Francisco e Araripe		6 (75,0)	7 (87,5)	
	P- value	1,000[2]	1,000[2]	
Highest degree				0,052[3]
Graduates		1 (16,7)	6 (100,0)	
Postgraduates		37 (82,3)	40 (88,9)	

(Conclusion)

		Healthy lifestyle		
Variable		Before the course N (%)	After the course N (%)	P-value
	P- value	0,003[2]	1,000[2]	
Self-perception of excesso weight				0,888[3]
Yes		16 (72,7)	20 (90,9)	
No		22 (75,9)	26 (89,7)	
	P- value	0,799[1]	1,000[1]	
Self-perception of health				0,810[3]
Very good / god		23 (74,2)	38 (92,7)	
Fair / Bad / Very bad		15 (75,0)	8 (80,0)	
	P- value	0,949[1]	0,250[2]	
Self-perception of physical activity level				0,602[3]
Very good / god		14 (77,8)	18 (94,7)	
Fair / Bad / Very bad		24 (72,7)	28 (87,5)	
	P- value	0,750[2]	0,639[2]	
Self-perception of diet				0,465[3]
Very good / god		28 (75,7)	32 (94,1)	
Fair / Bad / Very bad		10 (71,4)	14 (82,4)	
	P- value	0,734[2]	0,318[2]	
Self-perception of lifestyle				0,331[3]
Very good / god		24 (68,6)	36 (90,0)	
Fair / Bad / Very bad		14 (87,5)	10 (90,9)	
	P- value	0,185[2]	0,708[1]	
Overweight				0,528[3]
Yes		12 (66,7)	17 (94,4)	
No		26 (78,8)	29 (87,9)	
	P- value	0,502[2]	0,415[2]	

1 p-value of the chi-squared test for independence by person correlation; 2 p-value of the chi-squared test for independence by Fisher's exact test; 3 p-value of the Mantel-Haenszel chi-squared test.

DISCUSSION

The proposal for the ECOASUS-PE course sought to improve the quality of assistance and care for people with obesity. It also enabled integration between health professionals from all over the state, facilitating the exchange of experiences and knowledge, taking into account the reality of health services in a synergistic and multidisciplinary way and consequently encouraging prevention and health promotion.

The higher prevalence of a healthy lifestyle in the GI at the end of the course, together with the lower prevalence of excess weight, alcohol abuse and unhealthy eating habits in this group, reflects the greater adherence of its participants to health-promoting practices during the training in question. These changes observed in healthy lifestyles, the prevalence of which was 90.2% in the GI, is similar to the health professionals in Montes Claros - MG, with the same sociodemographic characteristics and environmental conditioning

factors, with 95.5% predominance of lifestyles considered good, very good and excellent among the professionals studied, who in turn had a good diet, physical activity, leisure time and moderate alcohol consumption. [21]

With regard to nutritional status, 35.5% of the GI were overweight and remained so until the end of the course. This prevalence of overweight is similar to that of the 215 health professionals from the primary healthcare system in Minas Gerais, who were 36.7% overweight and 16.8% obese. [22] Although there was no reduction in the prevalence of overweight in the GI, due to the short time span of the study, the adoption of some healthy lifestyle changes could become a protective factor against NCNCs in the long term. [3-5]

With regard to food consumption, in addition to the improvement in the IG compared to the CG, a significant increase in the intake of organic fruit and vegetables and fruit for breakfast was also observed in the IG, when comparing the initial and final moments. However, changing eating habits is neither simple nor instantaneous. It is not restricted to changing taste and preferences for other foods, but rather to remodeling cultural, family and social aspects, the individual's emotional and psychological state, routine and lifestyle. [23]

Adherence to organic food reduces the potential for allergic diseases and inflammatory diseases such as obesity, associated with healthy lifestyle habits, as well as fostering local healthy food production networks. [24] In addition, consuming more fruit in the diet and reducing ultra-processed foods improves health, allowing people to be more willing to carry out daily activities and reducing mortality rates from NCDs. [25] The habit of eating fruit for breakfast was also observed in another study of civil servants at a federal public institution, in which 63.1% of civil servants who did not eat fruit for breakfast were overweight. [26]

When analyzing the abusive consumption of alcoholic beverages, there was a high level of consumption among health professionals in the CG (25.9%), similar to the study by Lima et al. [27] in which 24.3% consumed alcohol abusively. And in relation to smoking, 4.3% said they were smokers, much lower than the national figures, in which 12.1% of Brazilians are smokers. [28] In both habits, it is possible to analyze a positive change in the group that took part in this study (GI).

The professionals reported having a good self-perception of health, leading to a good quality of sleep among the professionals. One study found correlations between sleep quality and anxiety ($p < 0.001$) and depression ($p < 0.001$), which is directly linked to an adequate perception of health among primary care professionals ($p < 0.05$). In health professionals on the front line during the COVID-19 pandemic, symptoms of anxiety and depression were predictors of sleep quality, directly interfering with the health of professionals. [29]

In this study, there was an improvement in the level of physical activity among health professionals who attended ECOASUS-PE, starting with 43.1% of insufficiently active, rising to 29.4% after the course. During social isolation, due to Covid-19, sedentary lifestyles intensified, according to the study by Mota et al. [9] 53.9% of Brazilian health professionals were sedentary and 25.8% reduced the frequency or intensity of exercise.

It is worth noting that the lifestyle changes of these professionals are not only linked to the knowledge acquired during the training course, but may also be influenced by the Covid-19 pandemic context, which may have contributed to changing habits as a way of preventing or mitigating symptoms. The pandemic has intensified the saturation of primary care, making it more difficult to adopt a healthy lifestyle. A study carried out in the United Kingdom found that diet, physical activity and other lifestyle behaviors related to weight were affected by the crises triggered by the Covid-19 pandemic, and people with obesity were disproportionately affected. [30]

According to Covitel, a survey carried out in the first quarter of 2022 showed that 20.6% of Brazilians abuse alcohol, 12.1% are smokers, there has been a reduction in the consumption of fruit and vegetables, and a sedentary lifestyle has increased from 13.1% to 18.4%. [28] The most critical period of the Covid-19 pandemic was the frequent exchange of main meals for quick snacks and the increase in purchases from delivery apps [10]. Health professionals increased their consumption of carbohydrates, which increased the propensity to gain weight, as well as immune compromise. [9]

There is currently no public policy from the Ministry of Health specifically for the care of health professionals, only for their qualification, which makes it difficult for professionals to seek out the service due to their work routine. It is worth noting that all the policies, programs and actions with an emphasis on caring for people with NCDs, obesity and health promotion, although carried out by health professionals, are also aimed at them as Brazilian citizens.

In practice, health professionals constantly face a great deal of emotional and physical stress, which has intensified during the Covid pandemic. Based on the results presented in this study, it can be said that investing in actions aimed at health promotion and prevention results in an improvement in people's lifestyles, suggesting that public policies be created. These policies should aim to improve healthy habits, such as increasing physical activity, improving sleep quality, changing to healthy eating habits and improving mental health.

The study's strengths include the challenge of analyzing the impact of a course on changing the lifestyle of health professionals, with a view to promoting their own health and that of SUS users. In addition to the complexity of reflecting on lifestyle in a capitalist, productivist and pandemic scenario. Another highlight was the measurement of eating habits using a questionnaire based on the food guide for the Brazilian population, which allows us to discuss consumption from a broader and more sustainable perspective.

CONCLUSION

Participation in the ECOASUS-PE course generated positive changes in the self-care and lifestyle of health professionals. In the intervention group, there was a significant increase in the «consumption of organic fruit and vegetables» and in the habit of «eating fruit for breakfast» after the course. Also in the IG, the majority of health professionals improved their self-perception of health, their smoking habits and their lifestyle at the end of the survey, when compared to the initial stage. At the final stage, excess weight was significantly lower in the IG when compared to the CG, as was inadequate alcohol consumption, eating habits and unhealthy lifestyle. As a result, carrying out educational and structuring interventions in the workplace, adhering to the PNEPS, can have an impact on public health individually and collectively. It is hoped that caring for those who care will be an indispensable condition for qualifying the care of SUS users in their respective living territories.

REFERENCES

1. Swinburn BA, Kraak VI, Allender S, Atkins VJ, Baker PI, Bogard JR, et al. The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report. The Lancet. 2019 Feb;393(10173):791–846. https://doi.org/10.1016/S0140-6736(18)32822-8

2. WHO. NONCOMMUNICABLE DISEASES: PROGRESS MONITOR 2022. Geneva; 2022.

3. Nordgren L, von Heideken Wågert P, Söderlund A, Elvén M. The Mediating Role of Healthy Lifestyle Behaviours on the Association between Perceived Stress and Self-Rated Health in People with Non-Communicable Disease. Int J Environ Res Public Health. 2022 Sep 23;19(19):12071. https://doi.org/10.3390/ijerph191912071

4. WHO. A Glossary of Terms for Community Health Care and Services for Older Persons. Kobe, Japan; 2004.

5. WHO. guidelines on physical activity and sedentary behavior: at a glance. Geneva; 2020.

6. Vanelli CP, Miranda LSP, Colugnati FAB, de Paula RB, Costa MB. Determining nutritional status: what is the value of self-reported weight and height? HU Revista. 2019 Apr 4;44(2):157-63. https://doi.org/10.34019/1982-8047.2018.v44.13933

7. Cavagioni L, Pierin AMG. Cardiovascular risk in health professionals of pre-hospital care services. Revista da Escola de Enfermagem da USP. 2012 Apr;46(2):395-403. https://doi.org/10.1590/S0080-62342012000200018

8. Souza NP, Leal VS, Santana SCS, Oliveira JS, Costa EC, Lira P. IC. ATLAS DA SITUAÇÃO ALIMENTAR E NUTRICIONAL EM PERNAMBUCO. ECOASUSPE, editor. Vol. 1. Recife-PE: BIBCAV/UFPE; 2021. 1-83 p.

9. Mota IA, Oliveira Sobrinho GD, Morais IPS, Dantas TF. Impact of COVID-19 on eating habits, physical activity and sleep in Brazilian healthcare professionals. Arq Neuropsiquiatr. 2021 May;79(5):429-36. https://doi.org/10.1590/0004-282x-anp-2020-0482

10. Botelho LV, Cardoso LO, Canella DS. COVID-19 and the digital food environment in Brazil: reflections on the influence of the pandemic on the use of food delivery apps. Cad Saude Publica. 2020;36(11). https://doi.org/10.1590/0102-311x00148020

11. BRASIL. National Policy for Permanent Education in Health: what has been produced to strengthen it? Brasília ; 2018.

12. Figueiredo ATT, Tavares FCLP, Silveira PRRM, Costa EC, Oliveira AA, Lira PIC. PROFESSIONAL PERCEPTIONS AND PRACTICES IN OBESITY CARE IN THE FAMILY HEALTH STRATEGY. Revista de Atenção à Saúde. 2020 Jul 23;18(64). https://doi.org/10.13037/ras.vol18n64.6274

13. Melo LRS. Evaluation of course participants' satisfaction with training on coping with and caring for obesity in primary care in Pernambuco and its elements in a virtual learning environment [Master's thesis]. [Recife]: Federal University of Pernambuco ; 2022.

14. Souza NP, Oliveira JS, Andrade GCL, Leal VS, Lira PIC. A broader view of obesity: Reflections on primary care. 1st ed. Ponta Grossa - PR: Atena Editora; 2021. https://doi.org/10.22533/at.ed.425213105

15. Souza NP, Oliveira JS, Andrade GCL, Leal VS, Lira PIC. An expanded view of obesity: Reflections on primary care. 2nd ed. Vol. 2. Ponta Grossa - PR: Editora Atena; 2021. 1-128 p.

16. WHO. Physical status: the use and interpretation of anthropometry. Geneva; 1995.

17. U.S. Physical Activity Guidelines for Americans, 2nd edition. Washington; 2018.

18. BRAZIL, Ministry of Health, Health Surveillance Secretariat, Health Care Secretariat. Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey - VIGITEL: Estimates on Frequency and Sociodemographic Distribution of Risk and Protective Factors for Chronic Diseases in the Capitals of the 26 Brazilian States and the Federal District in 2021. Brasília; 2022 Aug.

19. BRAZIL, Ministry of Health, Secretariat of Health Care, Department of Primary Care, Coordination of Work and Income. NATIONAL HEALTH SURVEY - PNS: 2019 : perception of health status, lifestyles, chronic diseases and oral health : Brazil and major regions / IBGE. Rio de Janeiro; 2020.

20. Gabe KT. Development and validation of a self-administered scale to assess diet according to the recommendations of the Dietary Guidelines for the Brazilian Population [Master's thesis] [São Paulo]: University of São Paulo; 2019. https://doi.org/10.11606/D.6.2019.tde-08112018-131030

21. Fernandes INM, de Almeida KR, Rocha FC, de Andrade Neto GR, Guedes MS, Gonçalves FF, et al. Analysis of the lifestyle of oncology health professionals. Revista de Enfermagem UFPE on line. 2018 Oct 7;12(10):2583. https://doi.org/10.5205/1981-8963-v12i10a237209p2583-2589-2018

22. Siqueira FV, Reis DS, Souza RAL, Pinho S, Pinho L. Overweight and associated factors among health professionals of the Family Health Strategy. Cad Saude Colet. 2019 Jun;27(2):138-45. https://doi.org/10.1590/1414-462x201900020167

23. GUTH MCA; AFS. Eating behavior and nutritional status of university students in the health area during the covid-19 pandemic. RBONE - Revista Brasileira de Obesidade, Nutrição e Emagrecimento. 2023 May 3;17(107):233-44.

24. Gonzalez DLP, Oliveira E, Souza G, Bonavides P, Santos N, Coimbra C, et al. BENEFITS OF CONSUMING ORGANIC FOODS - BIBLIOGRAPHICAL REVIEW. Revista Científica das Faculdades de Medicina, Enfermagem, Odontologia, Veterinária e Educação Física. 2022;1:1-8.

25. Santos TI. Lifestyle and professional practices for the promotion of physical activity in Community Health Agents [Master's thesis] [São Paulo]: School of Public Health, University of São Paulo; 2014.

26. Costa MAP, Vasconcelos AGG, Fonseca MJM. Prevalence of obesity, overweight and abdominal obesity and its association with physical activity in a federal University. Revista Brasileira de Epidemiologia. 2014 Jun;17(2):421-36. https://doi.org/10.1590/1809-4503201400020011ENG

27. Lima JA, Barros RCL, Albuquerque VS, Lima UTS, Freitas MG, Lima KBM, et al. Risk factors for cardiovascular diseases in nurses working alternate shifts. Research, Society and Development. 2022 Jun 14;11(8):e34511831407. https://doi.org/10.33448/rsd-v11i8.31407

28. Brazil. Telephone Survey of Risk Factors for Chronic Non-Communicable Diseases in times of pandemic - Covitel. São Paulo; 2022.

29. Chaves SÍD, Siqueira PPS de, Dos Santos Neves AC, Alves KM de L, Freitas MSG de, Lima AMJ de. Sleep, anxiety and depression and physical activity in health professionals

during the COVID-19 pandemic. Saúde e Pesquisa. 2023 Nov 28;16(4):1-16. https://doi.org/10.17765/2176-9206.2023v16n4.e11401

30. Robinson E, Boyland E, Chisholm A, Harrold J, Maloney NG, Marty L, et al. Obesity, eating behavior and physical activity during COVID-19 lockdown: A study of UK adults. Appetite. 2021 Jan;156:104853. https://doi.org/10.1016/j.appet.2020.104853.