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ORIGINAL ARTICLE

Health Literacy as a strategy for weight control and changes in food consumption markers

Letramento em Saúde como estratégia para controle ponderal e mudança nos marcadores de consumo alimentar

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ABSTRACT This article evaluates the effects of an intervention using videos based on the Dietary Guidelines and Health Literacy principles on the weight status and food consumption markers of overweight individuals attending Primary Health Care Units (PHCU). The study was conducted from September 2022 to March 2023, with the intervention taking place in PHCU in Fortaleza. The Control Group included 159 people, and the Intervention Group included 160. The videos served as an educational tool for the intervention group, which also received bi-weekly telephone contact from a health professional and access to the produced videos. Analysis showed that both groups had low levels of Health Literacy, with limitations in 'understanding', 'availability' of support from health professionals, sufficient information to care for their health, access to active health care, and the ability to navigate the Health System. The intervention did not promote weight loss but did reduce the number of people who ate meals in front of screens, those who ate only two meals a day, and those who consumed sweetened beverages the previous day.

KEYWORDS Instructional film and video. Weight reduction programs. Health literacy. Early intervention, educational. Eating.

RESUMO *Este artigo avalia os efeitos de uma intervenção com vídeos fundamentados no Guia Alimentar e nos pressupostos do Letramento em Saúde sobre o status de peso e sobre os marcadores de consumo alimentar de pessoas com excesso de peso atendidas em Unidades de Atenção Primária à Saúde (Uaps). Trata-se de um estudo realizado no período de setembro de 2022 a março de 2023, e a intervenção ocorreu em Uaps na cidade de Fortaleza. O Grupo Controle incluiu 159 pessoas, e o Grupo Intervenção, 160. Os vídeos foram utilizados como ferramenta educativa no grupo intervenção, que recebeu contato telefônico quinzenal do profissional de saúde e teve acesso aos vídeos produzidos. Após as análises observou-se que, com relação ao nível de Letramento em Saúde, ambos os grupos apresentaram valores baixos, com limitações nos quesitos 'compreensão', 'disponibilidade' de apoio por parte de profissionais da saúde, de informações suficientes para cuidar da saúde, de contar com cuidado ativo da saúde, e de conseguir navegar no Sistema de Saúde. Infere-se que a intervenção não favoreceu a perda de peso, mas promoveu a redução do número de pessoas que realizam suas refeições em frente a telas, no número daquelas que realizam apenas duas refeições por dia, e daquelas que consumiram bebidas adoçadas no dia anterior.*

PALAVRAS-CHAVE *Filme e vídeo educativo. Programas de redução de peso. Letramento para a saúde. Intervenção educacional precoce. Ingestão alimentar.*

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Introduction

In recent years, the prevalence of obesity has reached pandemic proportions, ranging worldwide from 3.7% to 38.2%[1]. In Brazil, according to the 2023 Telephone Surveillance System for Risk and Protective Factors for Chronic Diseases (Vigitel), the prevalence of obesity among adults ranged from 17.7% to 30.4%, depending on the city evaluated[2].

Meanwhile, studies indicate that traditional strategies to combat obesity, which focus solely on energy balance, have repeatedly failed, resulting in unsatisfactory and unsustainable outcomes in the medium and long term. This finding calls for a more holistic and intersectoral approach, including areas such as food labeling, inspection measures, and health education actions[3-8].

An indirect approach to obesity is providing guidance on dietary guidelines, which, like other measures to combat obesity, promote adequate and healthy eating and can help prevent excessive weight gain or weight loss[9]. In Brazil, there are the 'Dietary Guidelines for the Brazilian Population'[10,11]. However, this guide is a resource that is difficult to read and therefore understand, which may limit its reach among the intended population. This highlights the importance of creating educational materials based on Health Literacy, as they are generally more effective in achieving their objectives by using simple language and adapting to the social and health context of the people[12,13].

Therefore, it is urgent to review educational practices for weight control, given the various failed strategies aimed at reducing the rise in obesity in Brazil, such as intersectoral policies, including: Promotion of Adequate and Healthy Eating (PAAS); encouragement of physical activity through programs such as Health at School (PSE) and Health Academy; implementation of the Food Guide; and Support for Family Farming (Food Acquisition Program – PAA, Solidarity Kitchen). The objective of this work is to evaluate the effects of an intervention using videos based on the Food Guide and the principles of Health Literacy, which enabled the collection of data on weight status and food consumption markers among overweight individuals who attended primary care units.

Material and methods

This study was conducted between September 2022 and March 2023. The intervention took place in Primary Health Care Units (PHCUs) linked to the city hall of Fortaleza. Twelve PHCUs were selected – two in each of the six Regional Health Districts of Fortaleza, one for the Control Group and one for the Intervention Group. Although the municipality is currently divided into 12 regional districts, the physical structure of the Regional Health Secretariats at the time of the research was still organized into six, so this distribution was used for the selection of the units.

The units were designated by the Municipal Health Department of Fortaleza. The selection criteria were units open to collaborate in research and having no nutrition professional on staff to avoid bias during the intervention phase.

To determine the sample size, a convenience sampling strategy was used, including all obese patients who attended the participating health units during the intervention period, provided they met the inclusion criteria and agreed to participate in the study.

Inclusion criteria were: adults aged 20–59 years; overweight or Grade I obesity; and owning a cell phone with internet access. Exclusion criteria were: individuals with morbid conditions related to weight or conditions compromising mobility; those undergoing treatment with medications that cause weight fluctuations, such as antidepressants, antipsychotics, or corticosteroids; and pregnant or breastfeeding women. The decision to include only mild obesity (Grade I), and not moderate or severe obesity, was made to ensure greater homogeneity in the sample.

Once the participants were selected, they were assigned to the Intervention or Control group based on the PHCU where they were recruited and monitored, ensuring no interaction between participants in the different groups. The Control Group included 159 people, and the intervention group included 160.

In the first consultation for both groups, defined as the baseline of the intervention, participants had their weight and height measured and completed the following instruments: 1. Baseline Questionnaire, including identification, socioeconomic data, and knowledge of the 'Dietary Guidelines for the Brazilian Population'; 2. Health Literacy assessment using the Health Literacy Questionnaire, validated for Brazil (HLQ-Br)14; 3. Food consumption marker questionnaire from the Food and Nutrition Surveillance System (SISVAN).

During the waiting period for their appointment, participants were interviewed by undergraduate research students affiliated with the project who had been previously trained. They completed the questionnaires themselves under the supervision of a nutritionist. The interview lasted approximately one hour and thirty minutes.

During the initial consultation, in addition to completing questionnaires, patients received guidance on the diet to follow. The Control Group received guidance according to the PHCU protocol, while the Intervention Group received guidance based on the 'Dietary Guidelines for the Brazilian Population', presented through validated videos[15].

After the initial consultation, the Intervention Group received bi-weekly phone calls from the healthcare professional via text message or WhatsApp. Over four weeks, the following videos were made available: Week 1: Video 1 (What is a healthy weight) and Video 2 (How my weight can protect my health); Week 2: Video 3 (Knowing and selecting foods according to their degree of processing), Video 4 (Four recommendations you should not forget), and Video 5 (A golden rule can help you have a healthy diet); Week 3: Video 6 (How will I combine foods), Video 7 (Eating is not just swallowing food), and Video 8 (These are just 10 steps to having a healthy diet); Week 4: Video 9 (How can I have a healthy diet and lose weight) and Video 10 (Tips for planning your daily meals).

After one month, participants in both the Control Group and Intervention Group were assessed using the SISVAN food consumption markers, and their weight was measured again with the same scale used for the initial weighing. These variables were evaluated and compared to identify changes that occurred during the period.

For data analysis and processing, Microsoft Office Excel® version 13.0 and the Statistical Package for Social Sciences (SPSS) version 23.0 were used. In the descriptive analysis, absolute numbers and percentages were calculated. In the inferential analysis, associations were assessed using Pearson's Chi-square test[17]. For comparison of means, after evaluating the normality of data distribution with the Kolmogorov-Smirnov test[18], Student's t-test[19] was applied. For all analyses, the significance level adopted was 5% ($p < 0.05$).

This project is part of the umbrella research project entitled 'Plano Conecta Saúde: Combining Technological Innovation and Health Literacy in the Fight Against Chronic Non-Communicable Diseases', approved by the Ethics Committee for Research with Human Beings of the State University of Ceará under opinion number 3.795.260.

Results

A total of 319 people participated in the study, with 160 in the Intervention Group and 159 in the Control Group. The Intervention Group consisted mostly of unmarried women aged 30 to 49 years. In this group, most participants had more than nine years of schooling, were employed, had a family income between one and three minimum wages, and identified as mixed-race, according to data presented in *table 1*.

Table 1. Socioeconomic and demographic data of overweight participants treated in primary care units. Fortaleza, Ceará, Brazil, 2023

		Intervention		Control		
General Information	**Answers**	**N**	**%**	**N**	**%**	**p-value**
Sex	FEMALE	147	91.88	142	89.31	0.432
	MALE	13	8.13	17	10.69	
Age	20 - 29	34	21.25	26	16.35	0.274
	30 - 39	51	31.88	43	27.04	
	40 - 49	45	28.13	60	37.74	
	50 - 59	30	18.75	30	18.87	
Marital status	MARRIED	66	41.25	77	48.43	0.197
	NOT MARRIED	94	58.75	82	51.57	
Education	< 8 YEARS	18	11.25	37	23.27	**0.006**
	9-11 YEARS	79	49.38	57	35.85	
	≥ 12 YEARS	63	39.38	65	40.88	
Work situation	EMPLOYED	92	57.50	78	49.06	**0.015**
	UNEMPLOYED	63	39.38	81	50.94	
	RETIRED	5	3.13	0	0.00	
Family income	≤ 1 MW	50	31.25	91	57.23	**p<0.0001**
	1 - 3 MW	95	59.38	59	37.11	
	3 - 5 MW	14	8.75	9	5.66	
	≥ 5 MW	1	0.63	0	0.00	
Color	WHITE	30	18.75	16	10.06	0.096
	BLACK	24	15.00	21	13.21	
	BROWN	104	65.00	122	76.73	
	INDIGENOUS	1	0.63	0	0.00	
	YELLOW	1	0.63	0	0.00	

Source: Prepared by the authors.

MW: Minimum Wage.

The Control Group showed similar characteristics to the Intervention Group, except that it mainly consisted of unemployed individuals with a family income below the minimum wage. Most participants in the Control Group also had more than nine years of schooling. However, the number of people with less than eight years of schooling was twice as high in the Control Group compared to the Intervention Group.

Table 2. Health literacy of overweight participants treated in primary care units. Fortaleza, Ceará, Brazil, 2023

	Intervention		Control		
Dimensions	**Mean**	**SD**	**Mean**	**SD**	**p**
Understanding and support from healthcare professionals	2.47	0.72	2.3	0.63	0.027
Sufficient information to take care of your health	2.54	0.58	2.46	0.55	0.208
Active health care	2.6	0.49	2.62	0.48	0.628
Social support for health	2.71	0.55	2.56	0.56	0.105
Evaluation of health information	2.83	0.48	2.71	0.49	0.023
Ability to actively interact with healthcare professionals	3.44	0.97	3.2	0.9	0.026
Navigating the healthcare system	2.94	0.91	2.76	0.83	0.072
Ability to find good health information	3.27	0.9	3.23	0.89	0.657
Understanding health information and knowing what to do	3.58	0.81	3.4	0.77	0.048

Source: Prepared by the authors.

Both groups showed low levels of Health Literacy, with limitations in comprehension, availability of support from health professionals, sufficient information to manage their health, access to active health care, and the ability to navigate the health system. Conversely, they demonstrated potential in their ability to actively interact with health professionals, find reliable health information, understand health information, and know how to use it, as the averages for both groups were above 3. Overall, the literacy profiles of the two groups were very similar, with a downward trend.

However, it is worth noting that although the average for both groups was low, the Control Group had statistically lower averages than the Intervention Group in the dimensions of 'Understanding and support from health professionals', 'Evaluation of health information', 'Ability to actively interact with health professionals' and 'Understanding health information and knowing what to do', reflecting an even lower level of literacy in these areas.

Table 3. Knowledge of the Food Guide and food consumption markers (SISVAN) of overweight participants attended in primary care units. Fortaleza, Ceará, Brazil, 2023

		Intervention		Control		
Questions	**Answers**	**N**	**%**	**N**	**%**	**p-value**
KNOWLEDGE ABOUT THE FOOD GUIDE						
Have you heard of the Food Guide for the Brazilian population?	Yes	17	10.63	23	14.47	0.3
	No	143	89.38	136	85.53	
Have you heard of natural foods?	Yes	146	91.25	137	86.16	0.151
	No	14	8.75	22	13.84	
Have you ever heard of processed foods?	Yes	123	76.88	105	66.04	0.032
	No	37	23.13	54	33.96	
Have you ever heard of ultra-processed foods?	Yes	42	26.25	37	23.27	0.538
	No	118	73.75	122	76.73	

Table 3. Knowledge of the Food Guide and food consumption markers (SISVAN) of overweight participants attended in primary care units. Fortaleza, Ceará, Brazil, 2023

		Intervention		Control		
Questions	**Answers**	**N**	**%**	**N**	**%**	**p-value**
FOOD CONSUMPTION MARKERS - SISVAN						
Do you usually eat your meals while watching TV, using the computer and/or your cell phone?	Yes	114	71.25	100	62.89	0.15
	No	45	28.13	59	37.11	
	I don't know	1	0.63	0	0.00	
How many meals do you eat throughout the day?	Up to 2 meals	17	10.63	9	5.66	0.076
	3-5 meals	127	79.38	141	88.68	
	6 meals	16	10.00	9	5.66	
Did you eat beans yesterday?	Yes	107	66.88	110	69.18	0.659
	No	53	33.13	49	30.82	
	I don't know	0	0.00	0	0.00	
Did you eat fresh fruit yesterday? (do not include fruit juice)	Yes	93	58.13	98	61.64	0.469
	No	67	41.88	60	37.74	
	I don't know	0	0.00	1	0.63	
Did you eat any vegetables and/or legumes yesterday?	Yes	84	52.50	80	50.31	0.571
	No	76	47.50	78	49.06	
	I don't know	0	0.00	1	0.63	
Did you eat hamburgers and/or processed meats yesterday?	Yes	33	20.63	40	25.16	0.226
	No	126	78.75	115	72.33	
	I don't know	1	0.63	4	2.52	
Did you consume any sweetened beverages yesterday?	Yes	94	58.75	91	57.23	0.784
	No	66	41.25	68	42.77	
	I don't know	0	0.00	0	0.00	
Did you eat instant noodles, packaged snacks, or savory biscuits yesterday?	Yes	36	22.50	36	22.64	0.603
	No	124	77.50	122	76.73	
	I don't know	0	0.00	1	0.63	
Did you eat filled cookies, sweets, or treats yesterday?	Yes	59	36.88	63	39.62	0.519
	No	101	63.13	95	59.75	
	I don't know	0	0.00	1	0.63	
	No	101	63.13	95	59.75	
	I don't know	0	0.00	1	0.63	

Source: Prepared by the authors.

Table 3 shows that in both groups, the majority reported not having heard of the Food Guide, although they stated they had heard of natural, processed, and ultra-processed foods. However, the number of people who had not heard of processed foods was significantly higher in the Control Group.

The Intervention and Control Groups were similar in food consumption markers, as shown in *table 3*. At the beginning of the study, most participants in both groups reported eating meals in front of screens, consuming three to five meals per day, and having consumed sweetened beverages, fruits, beans,

and vegetables/legumes the previous day. The proportion for this last food group was comparable between the two groups. In contrast, most participants reported not having consumed cookies, sweets or candies, instant noodles, packaged snacks or savory biscuits, or hamburgers and processed meats.

Table 4. Comparison of weight and body mass index (BMI) of the Control Group and Intervention Group after 30 days of follow-up. Fortaleza, Ceará, Brazil, 2023

	Intervention (n=66)					Control (n=54)				
	Baseline		30 days			Baseline		30 days		
	Mean	SD	Mean	SD	p	Mean	SD	Mean	SD	p
Weight	70.79	9.53	70.65	9.68	0.442	72.85	8.54	72.85	9.11	0.987
BMI	28.48	2.03	28.43	2.15	0.556	29.88	2.38	29.87	2.59	0.894

Source: Prepared by the authors.

The mean initial weight (MIW) of the Intervention Group was 70.79 kg (±9.53), and the body mass index (BMI) was 28.48 kg/m² (±2.03). For the Control Group, the mean weight was 72.85 kg (±8.54), and the BMI was 29.88 kg/m² (±2.38). There was no statistically significant difference between the groups' initial weights (p = 0.137). The BMI was slightly higher in the Control Group, but both groups remained in the same nutritional status category (overweight).

After the 30-day intervention, there was no significant difference between the groups in anthropometric data, as shown in *table 4*. Therefore, no reduction in weight or BMI was observed in the Intervention Group. It is worth noting, however, that it was not possible to collect weight data after 30 days for all participants, as many were monitored remotely. Thus, this weight comparison included 66 members of the Intervention Group and 54 from the Control Group. For food consumption markers, data were collected from 75 participants in both the Intervention Group and the Control Group.

Table 5. Comparison between food consumption markers of the Control Group and Intervention Group after 30 days of follow-up. Fortaleza, Ceará, Brazil, 2023

		Intervention					Control				
		Baseline		30 Days			Baseline		30 Days		
Question	Response	n	%	n	%	p	n	%	n	%	p
Do you usually eat your meals while watching TV, using the computer and/or your cell phone?	Yes	114	71.25	34	45.33	0.000	100	62.89	43	57.33	0.416
	No	45	28.13	41	54.67		59	37.11	32	42.67	
	I don't know	1	0.62	0	0		0	0	0	0	
How many meals do you eat throughout the day?	Up to 2	17	10.62	2	2.67	0.043	9	5.66	3	4	0.258
	3 - 5	127	79.38	69	92		141	88.68	71	94.67	
	6	16	10	4	5.33		9	5.66	1	1.33	

Table 5. Comparison between food consumption markers of the Control Group and Intervention Group after 30 days of follow-up. Fortaleza, Ceará, Brazil, 2023

		Intervention					Control				
		Baseline		30 Days			Baseline		30 Days		
Question	Response	n	%	n	%	p	n	%	n	%	p
Did you eat beans yesterday?	Yes	107	66.88	52	69.33	0.707	110	69.18	55	73.33	0.516
	No	53	33.12	23	30.67		49	30.82	20	26.67	
	I don't know	0	0	0	0		0	0	0	0	
Did you eat fresh fruit yesterday? (do not include fruit juice)	Yes	93	58.12	45	60	0.786	98	61.63	46	61.33	0.785
	No	67	41.88	30	40		60	37.74	29	38.67	
	I don't know	0	0	0	0		1	0.63	0	0	
Did you eat any vegetables and/or legumes yesterday?	Yes	84	52.5	39	52	0.342	80	50.31	39	52	0.774
	No	76	47.5	35	46.67		78	49.06	36	48	
	I don't know	0	0	1	73.33		1	0.63	0	0	
Did you eat hamburgers and/or processed meats yesterday?	Yes	33	20.62	20	26.67	0.475	40	25.16	18	24	0.366
	No	126	78.75	55	73.33		115	72.33	57	76	
	I don't know	1	0.63	0	0		4	2.51	0	0	
Did you consume any sweetened beverages yesterday?	Yes	94	58.75	31	41.33	0.013	91	57.23	50	66.67	0.169
	No	66	41.25	44	58.67		68	42.77	25	33.33	
	I don't know	0	0	0	0		0	0	0	0	
Did you eat instant noodles, packaged snacks, or savory biscuits yesterday?	Yes	36	22.5	13	17.33	0.363	36	22.64	22	29.33	0.440
	No	124	77.5	62	82.67		122	76.73	53	70.67	
	I don't know	0	0	0	0		1	0.63	0	0	
Did you eat filled cookies, sweets, or treats yesterday?	Yes	59	36.88	31	41.33	0.512	63	39.62	37	49.33	0.311
	No	101	63.12	44	58.67		95	59.75	38	50.67	
	I don't know	0	0	0			1	0.63	0	0	

Source: Prepared by the authors.

After 30 days, the proportion of people who ate their meals while exposed to screens decreased from 71.25% to 45.33% (p<0.001) in the Intervention Group. There was also a reduction in the number of people who ate up to two meals a day, decreasing from 10.63% to 2.67%, as well as in the proportion of those who ate six meals a day, from 10% to 5.3% (p=0.043). Finally, the proportion of people who reported consuming sweetened beverages the previous day decreased from 58.75% to 41.33% (p=0.013), as shown in *table 5*.

No statistically significant changes were found for the other markers, nor were there any changes in any marker in the group not exposed to the videos.

Discussion

The socioeconomic and demographic profile of the public in this research is similar to that of patients treated in Primary Health Care (PHC) in the Northeast region, according to data presented by Guibu and colleagues (2017). The majority are women, unmarried, self-identified as brown, with education up to elementary school, and belonging to social classes D and E[20].

A slightly more recent analysis (2020) of the profile of obese patients treated in primary health care in Chapecó, Santa Catarina, found that the majority were female and that 50% of

the group had education up to high school[21]. In other words, although the Intervention Group had slightly better income and education levels than the Control Group, both still had a profile similar to that of the public served in the Northeast region and other parts of Brazil.

It is important to note that the units in each group were selected randomly and the participants were from the same neighborhoods, which resulted in similar socioeconomic characteristics among them. Therefore, the differences in income and education between the groups were unexpected.

Regarding the analysis of literacy levels, some authors have proposed evaluating the literacy level of primary health care users using various instruments. In general, the initial results suggest that the literacy level is low and is associated with low education and low income[22,23]. Although the association between these variables was not verified, difficulties were identified in some dimensions of health literacy. The poorer performance of the Control Group, observed in three dimensions of health literacy, may also be due to chance, since the selection of Health Units was done randomly.

Specifically regarding having sufficient information to take care of their health, both groups obtained low scores, as indicated by the fact that more than 80% of participants in both groups had not even heard of the Food Guide. Considering that these are patients already receiving care in primary health care units, their lack of awareness of this healthy eating guidance tool highlights an important issue at this level of care: the lack of knowledge or preparedness among professionals to use this tool. This study shows that, except for nutritionists, knowledge of and effectiveness in applying the Food Guide were relatively low among other professionals working in primary care[24]. The fact that nutritionist care in these units is still insufficient – in some units, this specialty does not even exist – contributes to the general population's lack of knowledge about this instrument[25]. On the other hand, even without knowing the Guide, most participants reported having heard of natural, processed, and ultra-processed foods.

Regarding the food consumption markers from SISVAN – a tool for quickly tracking the consumption of fresh and ultra-processed foods on the previous day – there was no difference between the two groups studied at baseline, with reports of consumption of natural foods as well as sugary drinks, and the habit of eating meals in front of screens.

After 30 days, the Intervention Group showed a significant reduction in the number of people eating meals in front of screens, a decrease in the number of people eating only two meals a day, and a reduction in the number of people who had consumed sweetened beverages the previous day.

Regarding screen time, it is already known that this habit is associated with poorer diet quality, excessive food consumption, increased calorie intake, and reduced consumption of healthy foods[26].

Similarly, consuming sweetened beverages, a liquid source of added sugars in the diet, is associated with potential hormonal dysregulation, insulin resistance, dyslipidemia, and obesity. In addition to these harms, this habit also leads to poorer diet quality, higher consumption of energy-dense foods, and insufficient intake of various vitamins and minerals. This habit is also related to obesogenic behaviors, such as eating in front of the television[27].

Although no change in weight was observed before and after the intervention—likely due to the short follow-up period—these behavioral changes may, over the long term, contribute to weight loss and improvements in nutritional status. However, weight alone is insufficient to determine the success of interventions, as the etiology of obesity is complex and multifactorial, resulting from interactions among genetic, environmental, lifestyle, and emotional factors. Moreover, restrictive diets that promote rapid weight loss often lead to subsequent weight regain, whereas sustained behavioral changes tend to be more effective[28,29].

On the other hand, there were no behavioral or anthropometric changes in the Control Group. This information is also relevant because, in addition to indicating a positive, albeit modest, result from the intervention, it highlights the low effectiveness of actions carried out in PHC in combating obesity.

The management of obesity in PHCUs raises legitimate concerns, as many units still lack adequate physical infrastructure for obesity care, including scales with a capacity of up to 200 kg, have infrequent extended teams, and provide little training for effective team processes. There is also a lack of rooms for group activities and insufficient records of users with obesity, resulting in inadequate obesity care in PHC in Brazil, with significant disparities between regions[29,30].

This precarious scenario was observed in both groups, as participants in the Intervention and Control Groups were monitored within PHCUs. This further underscores the advantage of adopting an approach tailored to the population's literacy level, even in an unfavorable context.

A systematic review of health literacy-based educational interventions conducted in low- to middle-income countries showed that interventions grounded in health literacy are more effective in preventing chronic non-communicable diseases. Because these measures are easily applicable, even in situations with specific resource constraints and regardless of follow-up time[12], the benefits of health education are sustained even in the most adverse social situations and can be effectively implemented in diverse social contexts and among various populations[2].

In this study, videos—a low-cost, lightweight, and easily disseminated technology—were made available on a free platform and can be accessed via the link provided at the end of this article. They are readily accessible and can be incorporated into the routine practice of professionals at this level of care, potentially generating additional positive outcomes. It is also worth noting that adopting a healthy diet is recommended for the management of other chronic conditions beyond obesity[31].

In this study, there was a loss of comparative data, as few patients returned for the second appointment, mainly due to ongoing fears of exposure related to the COVID-19 pandemic, which was only officially declared over in May 2023[32]. Although this reduction was not initially anticipated, it was not unexpected given the circumstances, as the onset of the COVID-19 pandemic led to a decline in health procedures and medical consultations in primary health care[33]. Since SISVAN data could be collected by telephone, the amount of information obtained after 30 days was slightly higher than the number of anthropometric measurements. Even with this limitation, the study showed that educational actions based on Health Literacy, even with a short follow-up period, show positive results in changes in eating behavior.

It is important to note another limitation: the small but present difference in schooling and literacy levels between the groups compared. Although unintentional, as participants were selected for convenience, one could question whether the positive result would have occurred if there had been a higher level of understanding of the information provided. However, the overall performance of all study participants, regardless of group, showed more limitations than potential for Health Literacy.

Conclusions

The intervention using videos based on the Food Guide and Health Literacy principles regarding weight and food consumption markers in overweight individuals receiving primary care did not promote weight loss. However, it significantly reduced the number of people who eat meals in front of screens, the number who eat only two meals a day, and the number who consumed sweetened beverages the previous day. It is suggested that the intervention be implemented over a longer period to verify additional changes.

Authorship contributions

Cabral LA (0000-0002-1622-9577)* contributed to the conception and design of the work, data collection, analysis and interpretation, revision and critical analysis, and final approval of the manuscript. Galiza DDF (0000-0001-9237-0372)* contributed to the analysis and interpretation of the data and revision of the manuscript. Carioca AAF (0000-0002-1194-562X)* contributed to the conception and design of the work, data collection, analysis and interpretation, revision and critical analysis, and final approval of the manuscript. Henriques EMV (0000-0002-7968-9917)* contributed to the analysis and interpretation of the data and revision of the manuscript. Vergara CMAC (0000-0003-1709-9951)* contributed to the analysis and interpretation of the data and revision of the manuscript. Barros AQS (0000-0002-1276-4759)* contributed to the analysis and interpretation of the data and revision of the manuscript. Sampaio HAC (0000-0001-5353-8259)* contributed to the conception and design of the work, data collection, analysis and interpretation, revision and critical analysis, and final approval of the manuscript. ■

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