FOOD AND NUTRITION IN COLLECTIVE HEALTH
DOI: 10.12957/demetra.2022.66168

DEMETRA
Alimentação, Nutrição & Saúde

Angélica Ribeiro e Silva[1]
Mariana Souza Lopes[1]
Nathália Luíza Ferreira[2]
Patrícia Pinheiro de Freitas[1]
Aline Cristine Souza Lopes[1]

[1] Universidade Federal de Minas Gerais, Departamento de Nutrição, Grupo de Pesquisa de Intervenções em Nutrição. Belo Horizonte, MG, Brasil.

[2] Universidade Federal de Lavras, Grupo de Pesquisa de Intervenções e Nutrição. Lavras, MG, Brasil.

Financial support: Organização Pan Americana de Saúde (OPAS/Brasil); Ministério da Saúde

Correspondence
Aline Cristine Souza Lopes
alinelopesenf@gmail.com

Distance qualification to promote adequate and healthy food in the Unified Health System (SUS - Brazil)

Qualificação à distância para promoção da alimentação adequada e saudável no Sistema Único de Saúde

Abstract

Introduction: Actions to promote adequate and healthy food (PAAS in Portuguese) have been gaining space on public policy agendas due to the urgency of caring for non-communicable chronic diseases. For the implementation of these actions in daily work, health professionals must be qualified, aiming at their empowerment and autonomy. ***Objective***: To evaluate professional qualification activity for the development of collective actions of PAAS in Primary Health Care (PHC). ***Methods***: Prospective and descriptive study conducted to evaluate professional qualifications offered at a distance, with a workload of 30 hours. Three classes were offered to PHC professionals from all Brazilian macro-regions. Quantitative *online questionnaires were used* and applied immediately after completion of the course and after three months. Results were stratified by country macro-region and course completion. ***Results***: Of the 3,957 enrolled, about a thousand professionals completed the course (completion rate: 25.3%), most of them women and registered dietitian. Professional qualification was considered very relevant for professional practice (99.2%) and with adequate methodological quality (99.6%). The main obstacle for not completing the course was the lack of time (78.1%). Most of the non-graduates were older, nurses, with more time working in the SUS, those who accessed the course via cell phone, and previous participation in professional qualification on the subject. ***Conclusions***: Professional qualification was able to develop skills and abilities to conduct collective PAAS actions among health professionals. However, strategies need to be proposed to increase the completion rate.

Keywords: Primary Health Care. Education, Continuing. Education, Distance. Health promotion.

Resumo

Introdução: Ações de promoção da alimentação adequada e saudável (PAAS) vêm ganhando espaço nas agendas das políticas públicas devido à urgência do cuidado das condições crônicas não transmissíveis. Para implementação dessas ações no cotidiano de trabalho, é fundamental que os profissionais de saúde sejam qualificados visando o seu empoderamento e autonomia. ***Objetivo***: Avaliar atividade de qualificação profissional para o desenvolvimento de ações coletivas de PAAS na Atenção Primária à Saúde (APS). ***Métodos***: Estudo prospectivo e descritivo conduzido para avaliar qualificação profissional ofertada à distância, com carga horária de 30 horas. Foram ofertadas três turmas para profissionais da APS de todas as macrorregiões brasileiras. Foram utilizados questionários quantitativos *on-line*, aplicados imediatamente após a conclusão do curso e após três meses. Os resultados foram estratificados por

macrorregião do país e conclusão do curso. ***Resultados***: Dos 3.957 inscritos, cerca de mil profissionais concluíram o curso (taxa de conclusão: 25,3%), a maioria mulheres e nutricionistas. A qualificação profissional foi considerada como muito relevante para a prática profissional (99,2%) e com adequada qualidade metodológica (99,6%). O principal obstáculo para a não conclusão do curso foi a falta de tempo (78,1%), sendo os não concluintes mais velhos, enfermeiros, com maior tempo de atuação no SUS, aqueles que acessaram o curso pelo celular e com participação prévia em qualificação profissional sobre o tema. ***Conclusões***: A qualificação profissional foi capaz de desenvolver competências e habilidades para a condução de ações coletivas de PAAS entre os profissionais de saúde. Entretanto, estratégias precisam ser propostas para ampliar a taxa de conclusão.

Palavras-chave: Atenção Primária à Saúde. Educação Continuada. Educação à Distância. Promoção da Saúde.

INTRODUCTION

Healthy eating patterns are related to the prevention and control of non-communicable chronic diseases, the biggest public health problem in Brazil and the world.[1] Despite this, there is an increase in unhealthy eating practices in the country, with an increase in the purchase of ultra-processed foods, to the detriment of unprocessed and minimally processed foods.[2] In this context, actions to promote adequate and healthy food (Promoção da Alimentação Adequada e Saudável - PAAS in Portuguese), specially developed in Primary Health Care (PHC), have been gaining ground on public policy agendas.[3]

In Brazil, PAAS is one of the guidelines of the National Food and Nutrition Policy (Política Nacional de Alimentação e Nutrição - PNAN in Portuguese)[3] and a strategic axis in the National Health Promotion Policy (Política Nacional de Promoção da Saúde - PNPS).[4] Therefore, it should be based on Food and Nutrition Education (FNE) and promote self-care and the autonomy of subjects based on the appreciation of food culture.[5] FNE as a field of knowledge and practice, continuous and permanent, must be based on problematizing and active learning resources that instigate dialogue between individuals and groups, covering all stages of the food system, meanings, and interactions that permeate eating behavior. It is expected that the use of educational approaches based on these principles will enable the person to be able to analyze, experiment, and make a decision, even when exposed to numerous possibilities of consumption. However, it is also necessary to recognize other dimensions involved in food choices, such as socioeconomic, structural, and environmental conditioned ones, which demand intersectional actions.

Despite advances in recent decades, multiple challenges persist in carrying out PAAS actions in the Unified Health System (Sistema Único de Saúde - SUS in Portuguese), including the scarcity of support materials and insufficient professional qualification.[6,7] In addition, public austerity policies have limited resources for carrying out FNE actions, especially interdisciplinary ones, in different practice scenarios. In this sense, Ordinance nº 2,979/2019 stands out, which suspends federal funding for the implementation and funding of the Teams of the Expanded Family Health and Primary Care Center (Equipes do Núcleo Ampliado de Saúde da Família e Atenção Primária - e-NASF-AP in Portuguese), whose main vocation is the collective approach, registered dietitians being one of the most prevalent professional categories and those responsible for technical-pedagogical support for carrying FNE actions.

In this perspective, the Brazilian Ministry of Health has made efforts to produce materials and technologies that help health professionals to overcome obstacles. The second edition of the Food Guide for the Brazilian Population[8] stands out, which presents guidelines for the diet of Brazilians based on qualitative guidelines that consider the ways of eating and the barriers to achieving an adequate and healthy diet.

From the Food Guide, other materials were produced aiming at its implementation in the daily life of health professionals and the population.[9-15] Among these materials, the Instructive: Working Methodology in Groups for Food and Nutrition Actions in Primary Care (Instrutivo: Metodologia de trabalho em Grupos para Ações de Alimentação e Nutrição na Atenção Básica - in Portuguese), developed by the Federal University of Minas Gerais (Universidade Federal de Minas Gerais - UFMG in Portuguese) in partnership with the Ministry of Health, stands out. This material aims to support the planning and execution of collective PAAS actions in PHC based on theory-based group work methodology, strengthen the adherence and effectiveness of actions, and enhance the role of users in the care of their health.[9]

However, in addition to instructional materials, health professionals must be qualified for their implementation in daily work, aiming at their empowerment and autonomy, as recommended by the National Policy on Permanent Education in Health (Política Nacional de Educação Permanente em Saúde - PNEPS in Portuguese).[16] However, the systematic qualification of the SUS workforce is challenging, given the continental

dimensions of the country, the discrepancies in routine and needs in the municipalities, and the high demand for health services. These aspects make Distance Education (Educação à Distância - EaD in Portuguese) an alternative for offering Permanent Health Education (PHE) actions in the SUS. Distance professional qualification allows for more democratic access, by reaching a significant number of professionals, even in more remote locations, in addition to favoring the use of innovative teaching methodologies that promote greater autonomy, flexibility, and convenience to participants.[17-19]

However, as relevant as developing professional qualification activities is evaluating them. Evaluating makes it possible to verify the impact of actions on knowledge and practices, and if the objectives are not satisfactorily achieved, it enables the reorientation and improvement of the activity.[9] Despite this, the scientific production that addresses the development and evaluation of professional qualification activities in the health area is limited, especially within the scope of the SUS, harming the organization, development, and expansion of qualified strategies.[20] In this scenario, this study aimed to evaluate professional qualification activity for the development of collective actions of PAAS in PHC

METHODS

Study design and sample

A prospective and descriptive study to evaluate the qualification activity offered to SUS professionals, mainly from PHC, from all Brazilian macro-regions, and the Federal District, based on a non-probabilistic sample. The training was carried out in the EaD modality, using the virtual learning environment (VLE) Moodle and tutored by adequately trained health professionals.

The invitation to participate in the professional qualification training was carried out on the social networks of the Ministry of Health and by invitation letter and short-term video, sent by the General Food and Nutrition Coordination of the Department of Health Promotion of the Secretariat of Primary Health Care of the Ministry of Health (Coordenação Geral de Alimentação e Nutrição do Departamento de Promoção da Saúde da Secretaria de Atenção Primária à Saúde do Ministério da Saúde - CGAN/DEPROS/SAPS/MS in Portuguese) for state managers and SUS health professionals across the country. The dissemination of professional qualifications was also carried out on the website of the Telehealth Center of the Hospital das Clínicas of UFMG (Telessaúde do Hospital das Clínicas da UFMG - Telessaúde HC-UFMG in Portuguese), responsible for hosting and managing the qualification activity; and by e-mail, messaging applications, and social networks of the Research Group on Interventions in Nutrition of the Department of Nutrition at UFMG (Grupo de Pesquisa de Intervenções em Nutrição do Departamento de Nutrição da UFMG - GIN/UFMG-CNPq in Portuguese), responsible for designing and managing the qualification.

Three offers of professional qualification activity were made: one in 2019 (May to September) and two in 2020 (February to November, and August to November, respectively). For the first two groups, at the request of the Ministry of Health, registrations for the North, Northeast, Midwest, and Federal District (FD) macro-regions were prioritized, to minimize inequities in access to continuing education activities.[21] After this stage, registrations were opened for the South and Southeast regions. The last two classes overlapped concerning the activity period due to the extension of the deadline for the end of the second class, due to the coronavirus pandemic (COVID-19) and the high work demand for health professionals.

As for the third group, also at the request of the Ministry of Health, registrations were directed to health professionals who were part of the projects of the National Call CNPQ/MS/SAS/DAB/CGAN nº 26/2018 (Fighting and Controlling Obesity in the Scope of SUS). Thus, there was no external dissemination, and the

inscriptions were made by the professionals of Telessaúde HC-UFMG through a list previously sent by the coordinators of the projects in each state.

The professional qualification activity

The professional qualification was developed by researchers from GIN/UFMG -CNPq in partnership with the CGAN/DEPROS/SAPS/MS, from the Instructive: Working Methodology in Groups for Food and Nutrition Actions in Primary Care[9] and its support materials, the books Demystifying Doubts about Food and Nutrition: Support Material for Health Professionals (Desmistificando Dúvidas sobre Alimentação e Nutrição: Material de Apoio para Profissionais de Saúde - in Portuguese)[10] and In the Kitchen with Fruits and Vegetables (Na cozinha com as Frutas, Legumes e Verduras - in Portuguese).[11]

The steps for the development of the professional qualification activity were as follows: (1) Preparation of the Political-Pedagogical Project by the GIN/UFMG-CNPq and Telessaúde HC-UFMG team, followed by approval by CGAN/DEPROS/SAPS/MS; (2) Preparation of scripts for video classes and short videos by the research team; (3) Portuguese revision of the proposed content; (4) Creation of a storyboard from the scripts approved by the design company; (5) Inclusion of scenarios, narration and animation detailing to the storyboard; (6) Development and approval of video classes; (7) Development of discussion forums, infographics, assessment activities, and complementary materials; (8) Development of assessment instruments for the professional qualification activity. Stages 4, 5, 6, and 7 were approved by the team responsible for developing the course and technicians from CGAN/DEPROS/SAPS/MS.

The professional qualification activity lasted 30 hours and aimed to contribute to the planning and development of collective innovative and participatory PAAS actions in PHC. Its structure consisted of 11 video classes, interspersed with five short videos, supported by two infographics and complementary materials: 11 "Did you know that?", which addressed curiosities and particularities regarding the topics discussed, and 11 "To learn more", which recommended additional reading materials. In addition, five discussion forums and seven evaluative activities were conducted to encourage reflection on the topics addressed and the exchange of experiences among participants.

The course team consisted of four duly trained tutors (three registered dietitians and a Physical Education professional) to conduct discussion forums and assessment activities; and two technicians from Telessaúde HC-UFMG, responsible for clarifying doubts regarding the use of the virtual platform.

The professional qualification activity was organized into six modules, starting with its presentation and discussion of the Brazilian food and nutrition scenario (Module I). Then, the concept of adequate and healthy food was discussed, based on the Food Guide for the Brazilian Population (Module II). In the next module, the concepts of PHE and FNE were the focus, working on theoretical and reflective aspects that are important for the planning and execution of more effective PAAS actions in the territory (Module III).

Modules IV, V, and VI addressed the contents and applications of the group methodology focused on PAAS in PHC contained in the Instructive and the support books. Module IV also addressed the potential challenges faced by health professionals in proposing and conducting collective activities, and ways to overcome these obstacles. In Module V, the main doubts that permeate the theme of adequate and healthy food were discussed, as well as different forms of culinary preparations containing fruits and vegetables. Finally, in Module VI, the importance and different ways of evaluating PAAS educational actions in PHC were discussed.

Those enrolled performed the proposed activities according to their availability, without having to leave their duties and interacting asynchronously with their peers in the VLE. In the first class (2019), there were specific dates for the opening and closing of the modules, to ensure the monitoring of all participants in the same module. However, aiming at greater adherence, in the following classes (2020) the modules were opened from the individual progress of each student.

Participation in the activities in each module was recorded through the Telessaúde HC-UFMG system and included the monitoring of assisted video classes, participation in forums, access to available materials and evaluation activities carried out in the stipulated period.

Data collect

At the end of the professional qualification activity, students were invited to answer two self-completed quantitative questionnaires. The first was made available immediately at the end of the professional qualification activity on the course platform for graduating students. This instrument addressed issues related to course evaluation, including the relevance of the topic and the proposed PAAS collective actions, support materials, and methods used, through the Likert scale (very adequate/adequate, indifferent, inadequate/very inadequate). In addition, it was asked whether the topics addressed were easy to understand (yes, partially, no).

The second questionnaire was developed in Google Forms and sent by e-mail three months after the completion of the professional qualification activity for graduating students or after the end of the qualification period in the case of non-graduating students. Each participant could receive, by e-mail, up to three notifications for completing the questionnaire during three consecutive weeks. The instrument investigated sociodemographic and work information: age (years), sex (male, female), profession (registered dietitian, nurse, doctor, or other), macro-region of the country (North, Northeast, Midwest and FD, Southeast and South), employment relationship (professional public, Consolidation of Labor Laws - CLL contract, temporary contract, other), time working in SUS (years), previous participation in PAAS professional qualification activity (yes, no) and means of access to EaD platform (mobile, computer or tablet). In addition, the applicability of collective actions in the daily work of professionals and the dissemination of the Instructive were investigated through the questions: use of materials to base PAAS actions before the qualification (yes, no), development of collective actions based on the Instructive (yes, no), support from another health professional in the actions (yes, partially, no), degree of difficulty in implementing the actions (very difficult/difficult, indifferent, easy/very easy), difficulties encountered in the development of actions (lack of time, financial resources, support from other professionals, managerial support, among others), shared or indicated the Instructive (yes, no), and felt able to apply the proposed PAAS collective actions (yes, no). The theoretical content of the professional qualification activity and the relevance of the Instructive's educational strategies for professional practice were also evaluated using a scale from 0 to 10 points, which, later, for the analysis, was recategorized into 0 to 3 points, 4 to 7 points and 8 to 10 points. For the participants who did not complete the professional qualification activity, the reason was also investigated, and for the second and third classes, an option related to the COVID-19 pandemic was inserted.

Ethical aspects

The study was approved by the Research Ethics Committee (CAAE: 93992418.0.0000.5149), and the participants signed an informed consent form.

Statistical analysis

Data collected on the Telessaúde platform and via Google Forms were exported to Excel ® and analyzed using the Stata statistical program, version 14.0.

The results were stratified by country macro-region. For the descriptive analysis of the data, the frequency distribution was considered for the categorical variables and the median and interquartile range (P_{25} - P_{75}) for the continuous variables.

To compare the graduating and non-graduating participants, Pearson's Chi-square or Fisher's Exact test was performed for categorical variables and the Mann-Whitney test for continuous variables

RESULTS

In the total of the three groups, 3,957 health professionals from all macro-regions of the country enrolled in the professional qualification activity. The overall completion rate was 25.3%. The percentage of participation in video classes and short videos was 53.7%, in evaluative activities 41.7%, and in thematic discussion forums 33.8%.

Considering the total number of applicants who answered the questionnaire sent after three months of completing the professional qualification activity (n=824), 7.5% were from the North macro-region, 28.8% from the Northeast, 10.7% from the Midwest and Federal District, 42.7% from the Southeast and 10.3% from the South, with a predominance of female participants and public employees.

In the Southeast macro-region, there was a difference in the employment relationship between graduates and non-graduates. Despite the predominance of public tenders in both groups, 21.2% of those who graduated had a CLL contract, while among students who did not graduate, this prevalence was 9.4% (p=0.026). Similarly, in the Northeast macro-region, 56.7% of non-graduated students had a temporary contract, while this prevalence among graduating students was 38.1% (p=0.001) (Table 1).

Table 1. Characteristics of the participants graduating and non-graduating the Professional Qualification activity for the Promotion of Adequate and Healthy Food. Brazil, 2019-2020.

Variables [median (P_{25}-P_{75})] or (%)	Total (n=824)	North		p-value	Northeast		p-value	Midwest and FD		p-value	Southeast		p-value	South		p-value
		G (n=35)	NG (n=27)		G (n=137)	NG (n=100)		G (n=70)	NG (n=18)		G (n=265)	NG (n=87)		G (n=62)	NG (n=23)	
Age (years)	35 (30-41)	33 (27-41)	48 (34-54)	**0.005****	31 (27-38)	33 (30-38)	**0.016****	37 (28-41)	36.5 (32-40)	0.812**	35 (31-40)	36 (32-43)	0.241**	34 (30-39)	36 (32-41)	0.319**
Female	93.8	94.3	81.5	0.121*	91.2	94.0	0.428#	94.3	100.0	0.577*	93.2	96.5	0.253#	98.4	100.0	1.000*
Profession[1]																
Registered dietitian	75.1	81.8	61.5	**0.022***	85.7	61.0	**<0.001***	68.8	64.7	0.077*	76.5	69.5	**<0.001***	88.5	72.7	0.130*
Nurse	18.3	12.1	38.5		10.5	35.8		15.6	35.3		12.5	26.8		9.8	27.3	
Doctor	1.3	-	-		-	3.2		-	-		1.6	3.7		-	-	
Other#*	5.3	6.1	-		3.8	-		15.6	-		9.3	-		9.3	-	
Employment relationship[2]																
Professional public	53.7	43.7	52.0	0.542*	40.5	36.1	**0.001***	65.6	66.6	0.234*	50.6	64.7	**0.026***	87.1	78.3	0.053*
CLL contract	12.9	9.4	8.0		12.7	7.2		4.7	16.7		21.2	9.4		1.6	17.4	
Temporary contract	29.2	37.5	40.0		38.1	56.7		20.3	16.7		23.9	24.7		9.7	4.3	
Other##	4.2	9.4	-		8.7	-		9.4	-		4.3	1.2		1.6	-	
Time working in SUS (years)[3]	6 (3-12)	7 (3-11)	10 (3-21)	**0.043****	4 (2-8)	7 (3.1-12)	**<0.001****	10 (2-14)	12 (5-16)	0.347**	5 (2-11)	6 (3-14)	0.052**	5.5 (3-10.8)	7 (3.5-10)	0.475**
Previous participation in PAAS qualification[4]	58.2	42.9	77.8	0.006#	56.3	56.0	0.964#	57.1	61.1	0.761#	55.3	64.7	0.127#	66.1	69.6	0.765#
Use of materials to base PAAS actions before the qualification[5]	85.2	94.3	81.5	0.223*	84.6	79.6	0.324*	85.7	94.4	0.448*	85.2	81.4	0.404*	93.4	86.9	0.386*
Acess to EaD platform[6]																
Mobile	10.0	8.6	19.2	0.268*	8.0	20.4	**0.012***	4.3	5.9	1.000*	8.3	19.3	**0.012***	-	4.3	0.271*
Computer	89.5	91.4	80.8		91.3	78.6		94.3	94.1		91.3	80.7		100.0	95.7	
Tablet	0.5	-	-		0.7	1.0		1.4	-		0.4	-		-	-	
COVID-19 interfered with qualification[7]	38.2	33.3	57.1	0.163#	35.9	53.8	0.056#	38.6	50.0	0.674*	32.1	59.5	**0.002#**	16.7	57.1	0.066#

Note: CLL: Consolidation of Labor Laws. FD: Federal District. PAAS: Promotion of Adequate and Healthy Food. SUS: Unified Health System. G: graduates. NG: non-graduates
p-value = **Kruskall -Wallis. #Pearson's Chi-square or *Fisher's exact test.
[1]44 missing. [2]33 missing. [3]31 missing. [4]5 missing. [5]7 missing. [6]8 missing. [7]Information collected in two classes of 2020 that correspond to the period of the COVID-19 pandemic (n=488) – 1 missing. #*Community Health Agent. social worker. biologist. dentist. physical educator. student. physiotherapist. journalist. psychologist. nursing technician. ##Self-employed. scholarship holder. commissioned position. contract. cooperative member. accreditation. statutory. internship

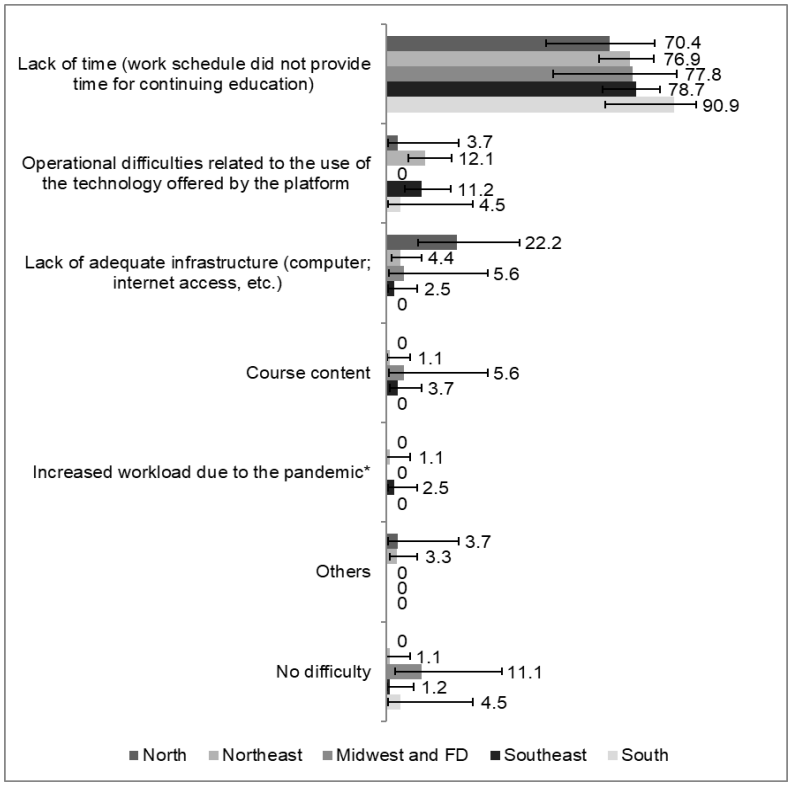
Registered dietitians. nurses. and doctors were the professional categories that most enrolled in the professional qualification activity. with the highest proportion of nurses among those who did not complete the course (North: 38.5%; Northeast: 35.8%; Southeast: 26.8%). when compared to those who completed it (North: 12.1%; Northeast: 10.5%; Southeast: 12.5%; p=0.022. p<0.001. p<0.001. respectively). Regarding age. in the North and Northeast macro-regions. a higher median value was observed among non-graduated students compared to graduated (48 years old; 34-54 vs. 33 years old; 27-41; p=0.005 and 33 years old; 30-38 vs. 31 years old; 27-38; p=0.016. respectively) (Table 1).

Higher prevalence of computer use to carry out professional qualification activities were observed among graduated students (Northeast: 91.3% vs. 78.6%; p=0.012 and Southeast: 91.3% vs. 80.7%; p=0.012) and longer working time in the SUS among non-graduate students (North: 10 years; 3-11 vs. 7 years; 3-11; p=0.043 and Northeast: 7 years; 3.1-12 vs. 4 years; 2-8; p<0.001) (Table 1).

As for the reasons for not completing the professional qualification activity. in the Southeast macro-region. a higher proportion of non-graduate students was identified who stated that the COVID-19 pandemic interfered with their performance when compared to graduate students (59.5% vs. 32.1%; p=0.002) (Table 1).

When asked about the reasons for not completing the professional qualification. the main reason was lack of time (North: 70.4%. Northeast: 76.9%. Midwest and Federal District: 77.8%. Southeast: 78.7%. and South: 90.9%). followed by the absence of adequate infrastructure. which was significantly different between the macro-regions (North: 22.2% *vs.* Northeast: 4.4%. Midwest and Federal District: 5.6%. Southeast: 3.7% and South: 0.0%; p=0.010) (Figure 1).

Figure 1. Reasons for non-graduated the Professional Qualification activity for the Promotion of Adequate and Healthy Food in Primary Care. Brazil. 2019-2020



Note: FD: Federal District. Total: n=255. North: n=27. Northeast: n=91 (9 missing). Midwest and FD: n=18. Southeast: n=80 (7 missing). South: n=22 (1 missing). *Valid only for the two classes of 2020 that correspond to the period of the COVID-19 pandemic. p-value: Fisher's exact test.

Almost all the participants who completed the professional qualification activity rated the topics covered as relevant. clear. and easy to understand (99.2%). Most considered the quality of the materials used as adequate/very adequate (98.4%). and 99.6% evaluated the methods used as adequate (Table 2).

Table 2. Evaluation of the participants graduated the Professional Qualification for the Promotion of Adequate and Healthy Food. Brazil. 2019-2020. (n=974)

Evaluated aspect	Likert scale	Percentage
Relevance of the topic	Inadequate/very inadequate	0.2
	Indifferent	0.6
	Adequate/very adequate	99.2
Support materials quality	Inadequate/very inadequate	0.4
	Indifferent	1.2
	Adequate/very adequate	98.4
Methods used	Inadequate/very inadequate	0.1
	Indifferent	0.3
	Adequate/very adequate	99.6
Topics addressed were easy to understand	Yes	99.0
	Partially	0.8
	No	0.2

Most participants (56.1%) reported having developed the proposed PAAS actions in PHC in their daily work. And more than 50% of students considered it easy/very easy to develop PAAS collective actions and received support from other health professionals to carry them out. with students from the Northeast macro-region receiving more help when compared to those from the South (68.7% vs. 47.2%; p=0.008) (Table 3).

In general. the main difficulties for the development of collective actions of PAAS in daily work were: lack of printed support materials (40.3%). lack of financial resources (40.0%). and user interest/low adherence (37.2%). The lack of support materials was more expressive in the North macro-region (61.9%) and less expressive in the South (19.4%) (p=0.022) (Table 3).

Most participants reported that the theoretical content of the professional qualification activity helped in their professional practice (86.1%) and that the proposed educational strategies were relevant to their daily work (84.0%). More than half of the participants also reported having shared the materials with their colleagues. with this prevalence being higher in the Central-West and FD macro-regions (69.6%) and lower in the South (53.2%) (p=0.030). Practically all participants (99.7%) would recommend to a colleague the Instructive: Working Methodology in Groups for Food and Nutrition Actions in Primary Care. and 90.6% of them feel able to disseminate the information contained in the Instructive (Table 3).

.

Table 3. Practical application and dissemination of the Instructive: Methodology for Working in Groups for Food and Nutrition Actions in Primary Care. by the graduates of the Professional Qualification for the Promotion of Adequate and Healthy Food. Brazil. 2019-2020.

Variables	Total (n=569)	North (n=35)	Northeast (n=137)	Midwest and FD (n=70)	Southeast (n=265)	South (n=62)	p-value
Development of collective actions of PAAS (%)[1]	56.1	58.8	62.4	56.5	51.9	58.1	0.384#
Support from another health professional in the actions(%)[2]							**0.008**#
No	21.7	20.0	7.2	18.4	27.3	38.9	
Partially	22.3	25.0	24.1	21.1	23.5	13.9	
Yes	56.0	55.0	68.7	60.5	49.2	47.2	
Degree of difficulty in implementing the actions (%)[3]							0.494*
Very difficult/difficult	22.3	25.0	19.8	31.6	20.7	22.9	
Indifferent	20.7	30.0	19.8	10.5	24.4	14.2	
Easy/very easy	57.0	45.0	60.4	57.9	54.8	62.9	
Difficulties encountered in the development of actions (%)#							
Lack of support materials	40.3	61.9	44.8	37.5	40.4	19.4	**0.022**#
Lack of financial resources	40.0	33.3	45.9	47.5	38.3	27.8	0.284#
Lack of interest from users/low adherence	37.2	42.9	34.5	32.5	39.0	38.9	0.881#
Lack of time for action planning	33.5	23.8	34.5	35.0	32.6	38.9	0.830#
Lack of support from other health professionals	24.3	9.5	25.3	27.5	23.4	30.6	0.465#
Lack of managerial and administrative support	20.6	23.8	21.8	27.5	17.7	19.4	0.683*
Difficulty in changing the group's driving logic	12.9	9.5	9.2	10.0	15.6	16.7	0.596*
Difficulty establishing a bond with the user	9.5	4.8	8.0	15.0	10.6	5.6	0.640*
No difficulty	9.2	9.5	6.9	7.5	12.1	5.6	0.694*
Insufficient practical training	3.7	4.8	3.5	5.0	2.8	5.6	0.781*
Theoretical content helped in professional practice (%)							**0.011***
0 a 3 points	0.9	0.0	0.0	0.0	1.9	0.0	
4 a 7 points	13.0	0.0	8.8	10.0	17.4	14.5	
8 a 10 points	86.1	100.0	91.2	90.0	80.7	85.5	
Relevance of the Instructive's educational strategies for professional practice (%)							0.364*
0 a 3 points	2.1	0.0	1.5	0.0	3.0	3.2	
4 a 7 points	13.9	5.7	10.9	12.9	17.0	12.9	
8 a 10 points	84.0	94.3	87.6	87.1	80.0	83.9	
Shared materials with a colleague (%)[4]	60.0	60.0	68.4	69.6	54.8	53.2	**0.030**#
Recommend the materials to a colleague (%)[5]	99.7	100.0	100.0	98.6	99.6	100.0	0.558*
Feel able to disseminate the Instructive (%)[6]	90.6	96.7	89.9	92.7	88.9	93.3	0.656*

Note: PAAS: Promotion of Adequate and Healthy Food. FD: Federal District. Each participant could choose more than one item and represents the prevalence of affirmative response for each difficulty.
[1]13 missing. [2]50 missing. [3]50 missing. [4]9 missing. [5]2 missing. [6]37 missing. p-value: #Pearson's Chi-square test or *Fisher's exact test.

DISCUSSION

The professional qualification activity was evaluated as satisfactory by almost all the students. with a thousand health professionals from all over the country being certified. A considerable portion of participants reported the relevance of the Instructive and having developed the collective activities for PAAS proposed in their daily work.

The age of the participants was similar to a study that evaluated self-instructional courses of the Plataforma Universidade Aberta do SUS (UNA-SUS) between 2010 and 2019.[22] In the North and Northeast macro-regions. it was found that the median age differed between graduated and non-graduated students. and a difference was also observed regarding the time of work in the SUS. Younger professionals and professionals who had a short time in their carrier participated the most in professional qualification. possibly because they sought to boost their curriculum and professional performance. or even because of the ease of access to virtual platforms or initial motivation during their first years as graduates. This motivation to improve may also be related to the bond that the professional has with the SUS. and the temporality of the contract may have led professionals in the macro-region of the Northeast to have a lower rate of completion of the professional qualification activity.

There was greater participation of women and registered dietitians in the professional qualification activity. as expected. In Brazil. 94.1% of registered dietitians are women[23] and 79.9% of health professionals who participate in professional qualification courses on the Plataforma UNA-SUS are also female.[22] Although the execution of PAAS actions is the responsibility of all health professionals. it has a closer connection with registered dietitians. PAAS is a health promotion strategy that aims to guarantee the human right to adequate food and food and nutritional security - therefore. it requires interdisciplinary action for the integrality of actions. Furthermore. in PHC. the registered dietitian is not the first contact professional with the user. and the performance of other professional categories. such as doctors and nurses. is crucial so that PAAS actions reach the entire population. For this. however. health professionals need to feel prepared to develop these actions and to have guaranteed spaces in their daily work to participate in PHE activities with this objective. Valuing the participation of all professional categories in qualification activities aimed at PAAS could have led to higher completion rates by nurses in the North. Northeast. and Southeast macro-regions. for example.

Until then. the qualification of professionals from the Family Health teams and Primary Care teams for the development of PAAS actions had. in part. been guaranteed by the technical-pedagogical support offered by the registered dietitians of the e-NASF-AP. However. with the publication of Ordinance nº 2.979/2019. in which federal funding mechanisms for the implementation and funding of e-NASF-AP were suspended. many municipalities were unable to maintain these teams or even directed health professionals to other levels of attention.[23] In this sense. the offer of professional qualification for the development of collective actions of PAAS through EaD platforms. aiming to meet the dimension of Brazilian PHC. becomes even more relevant.

Duly qualified health professionals are more likely to provide adequate nutritional guidance.[25-27] However. in Brazil. the average percentage of completion of distance learning courses is 30.9%.[22] slightly higher than that found in this study.

Despite presenting modest completion rates. the modality of EaD represents an opportunity for health professionals to qualify. since their work schedules are usually complex. impairing attendance in face-to-face courses.[28] Considering the territorial extension of the country and the different levels of coverage of face-to-face PHE actions. it allows for greater capillarity and equity of access to information.[20] with the flexibility of schedules and space. and the adoption of the participant's own pace.[17,29] Furthermore. the distance education modality allows the student to have access to the same content as many times as necessary for

their learning.[30.31] Finally. the offer of tutoring support in distance education courses is a differential. as it favors sharing and the learning process. tutoring being considered a great ally for the success of distance qualification.[17]

On the other hand. distance education has limitations. such as the inability to exchange experiences between teacher and student. and the need for didactic materials that are well designed and challenging. aiming to produce argumentative skills in the student. In addition. the EaD activity development team must have expertise in using technological resources to contribute to learning. From the student's perspective. the ability to use technological resources can greatly influence the use of the course. EaD methodologies generate autonomy for the student in the learning process. however. they need to include knowledge assessment strategies that prevent them from completing the course automatically. just to obtain certification.[32.33]

From the participants' point of view. the main obstacle that prevented the completion of professional qualification activities was the difficulty in guaranteeing a protected agenda for their participation. Despite the PHE being a Brazilian government strategy guaranteed in the PNEPS.[16] of the participants reported that the work schedule did not set a time for this practice. as verified in other studies.[22.34] In this sense. the use of information and communication technologies to implement PHE can be an alternative.[34] But. on the other hand. it can also be a barrier for those who have greater difficulty using online platforms.[35-37]. or overload for those who carry out the activity outside their work environment and hours. Another difficulty refers to the interfaces used. which are usually developed for use on a computer. making access by cell phone or tablets difficult. possibly contributing to the non-completion of the professional qualification activity in the Northeast and Southeast macro-regions. as seen in this study.

These difficulties in accessing and using technologies can differ according to the macro-region of the country. A study carried out with data from the extinct Program for the Improvement of Access and Quality in Primary Care showed that PHC professionals from the North and Northeast macro-regions had less incorporation of information technologies in their work environment (computers. printers. internet. televisions. Telessaúde and peripheral areas).[38] which may have influenced the difficulty of adequate infrastructure observed in the North macro-region.

Another obstacle investigated in this work was the interference of the COVID-19 pandemic. which affected the completion of the activity in the participants of the Southeast macro-region. where the lethality of the disease was high and there was a greater demand for care. considering the high number of cases.[39]

When obstacles to participation in professional qualification and certificates were overcome. health professionals reported that it was feasible to put into practice the group methodology for PAAS proposed in the course. demonstrating its applicability and feasibility in daily work. It is noteworthy that the methodology proposed in the Instructive aims to promote the empowerment and autonomy of users by generating dialogue. problematization. and shared construction of knowledge. as well as health professionals. by proposing actions based on scientific. feasible. and dialogic evidence. opposing if to banking[40] and prescriptive education. which contributes little to the promotion of the subjects' health.

It is worth noting that participants from the Northeast macro-region who put some action of the Instructive into practice reported receiving more support from other professionals when compared to those from the South macro-region. where there was less scarcity of support materials for the development of collective actions. In addition to the lack of support materials. other difficulties pointed out for the development of collective PAAS actions were the lack of financial resources and user interest/low adherence.

Similar difficulties were found in other experiences of health promotion in groups.[41] It is believed that the users' lack of interest can be minimized or even overcome by the use of the proposed problem-solving methodology. which allows the joint construction of knowledge and the user's protagonism. But. for this. it is necessary to guarantee financial and structural resources for the development of PAAS actions. as well as the awareness of different professional categories for collaborative and interprofessional practice.

Despite the relevant results. this study has limitations that must be considered. including the fact that it was conducted in a convenience sample. that is. not probabilistic. However. all classes offered included SUS health professionals. in line with the focus of professional qualification actions recommended by the Ministry of Health. Another limitation refers to the challenges inherent to the COVID-19 pandemic. which hampered the progress of the professional qualification activity and the completion of participants in the classes offered in 2020. However. the completion rates were still similar to the literature.[22] possibly due to the strategies adopted to support health professionals in completing the course. including extending the deadline for completion. sending emails and motivational videos. and drawing books.

This study has potential that should be highlighted. First. its national scope. which allowed access to professional qualification activity in all macro-regions of the country. with priority given to those with greater difficulty in access. The professional qualification activity was planned and conducted by a multi-professional team with experience in health education and based on Instructive from the Ministry of Health. aligned with the PNAN and the PNPS. thus contributing to the implementation of the Food Guide for the Brazilian Population. Its development in EaD format. with tutoring support and outstanding methodological quality. allowed health professionals to expand access to instructional materials from the Ministry of Health and PHE activities. promoting equity in training within the SUS. Finally. it is noteworthy that this is the first national study that aimed to evaluate professional qualification activities aimed at collective actions of PAAS. in distance education format. meeting the need to evaluate professional qualification activities developed in the SUS to strengthen the Brazilian health system.

According to health professionals. the professional qualification activity for the development of collective PAAS actions in PHC contributed to the improvement of skills and abilities for the application of the group methodology in their work routine. However. the suspension of federal funding for the cost of e-NASF-AP could harm the development of PAAS groups. since it is a practice that must be developed by multidisciplinary teams. Thus. it is important to carry out qualification activities aimed at SUS professionals to expand the offer of empowering and autonomy-promoting PAAS actions that are capable of contributing to the health and quality of life of users. Furthermore. such strategies must be aligned with the different policies and intersectoral actions in the territory that contribute to adequate and healthy food. such as. for example. guaranteeing the human right to adequate food. building a healthy food environment. and the qualification of health professionals since graduation to work from the perspective of health promotion.

Finally. because of these positive results. the professional qualification activity evaluated here was adapted to the self-instructional modality and is available on the Plataforma UNA-SUS. aiming to reach an even greater contingent of health professionals and. consequently. users of the SUS.

ACKNOWLEDGMENT

To the health professionals who participated in the professional qualification. To the ZW Design team. who developed the videos. and to Telessaúde HC-UFMG. for hosting and advising the Course.

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. Lancet. 2019;393(10173):791-846. https://doi: 10.1016/S0140-6736(18)32822-8

2. Brasil. Ministério da Economia. Instituto Brasileiro de Geografia Estatística. Diretoria de Pesquisas. Coordenação de Trabalho e Rendimento. Pesquisa de orçamentos familiares 2017-2018: análise do consumo alimentar pessoal no Brasil / IBGE, Coordenação de Trabalho e Rendimento. - Rio de Janeiro: IBGE, 2020.

3. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Política Nacional de Alimentação e Nutrição. Brasília: Ministério da Saúde, 2013a.

4. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Secretaria de Atenção à Saúde. Política Nacional de Promoção da Saúde: PNPS: Anexo I da Portaria de Consolidação nº 2, de 28 de setembro de 2017, que consolida as normas sobre as políticas nacionais de saúde do SUS. Brasília: Ministério da Saúde, 2018.

5. Brasil. Ministério do Desenvolvimento Social e Combate à Fome. Marco de referência de educação alimentar e nutricional para as políticas públicas. – Brasília, DF: MDS; Secretaria Nacional de Segurança Alimentar e Nutricional, 2012.

6. Almeida LM, Campos KFC, Randow R, Guerra VA. Estratégias e desafios da gestão da atenção primária à saúde no controle e prevenção da obesidade. Rev. Gestão & Saúde. 2017; [acesso em 2021 nov 11] 8:114-139. Disponível em: https://periodicos.unb.br/index.php/rgs/article/view/3700

7. Lopes MS, Freitas PF, Carvalho MCR, Ferreira NL, Campos SF, Menezes MC, et al. Challenges for obesity management in a unified health system: the view of health professionals. Family Practice. 2021;38(1):4-10. https://doi: 10.1093/fampra/cmaa117

8. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Guia alimentar para a população brasileira. 2. ed., 1. reimpr. – Brasília: Ministério da Saúde, 2014.

9. Brasil. Ministério da Saúde. Universidade Federal de Minas Gerais. Instrutivo: Metodologias de Trabalho em Grupos das Ações de Alimentação e Nutrição na Atenção Básica. Brasília: Ministério da Saúde, 2016a.

10. Brasil. Ministério da Saúde. Universidade Federal de Minas Gerais. Desmistificando dúvidas sobre alimentação e nutrição: material de apoio para profissionais de saúde. Brasília: Ministério da Saúde, 2016b.

11. Brasil. Ministério da Saúde. Universidade Federal de Minas Gerais. Na cozinha com as frutas, legumes e verduras. Brasília: Ministério da Saúde, 2016c.

12. Brasil. Ministério da Saúde. Manual instrutivo: implementando o guia alimentar para a população brasileira em equipes que atuam na Atenção Primária à Saúde. Brasília: Ministério da Saúde, 2019.

13. Brasil. Ministério da Saúde. Fascículo 1 Protocolos de uso do guia alimentar para a população brasileira na orientação alimentar: bases teóricas e metodológicas e protocolo para a população adulta. Brasília: Ministério da Saúde, 2021a.

14. Brasil. Ministério da Saúde. Fascículo 2 Protocolos de uso do Guia Alimentar para a população brasileira na orientação alimentar da população idosa. Brasília: Ministério da Saúde, 2021b.

15. Brasil. Ministério da Saúde. Instrutivo de Abordagem Coletiva para manejo da obesidade no SUS / Ministério da Saúde, Universidade Federal de Minas Gerais. – Brasília: Ministério da Saúde, 2021c.

16. Brasil. Ministério da Saúde. Portaria GM/MS n. 198, de 13 de fevereiro de 2004. Institui a Política Nacional de Educação Permanente em Saúde. Brasília: Ministério da Saúde, 2004.

17. Oliveira MG, Sousa CM, Vargas CRM, Oliveira DM, Lima MG, Gussi MA.Educação a distância como recurso para capacitação de Agentes Comunitários de Saúde para intervenções preventivas relacionadas ao álcool e outras drogas. Reciis – Rev Eletron Comun Inf Inov Saúde. 2019;13(1):48-61. https://doi: 10.29397/reciis.v13i1.1593

18. Chase TJ, Julius A, Chandan JS, Powell E, Hall CS, Phillips BL, et al. Mobile learning in medicine: an evaluation of attitudes and behaviours of medical students. BMC Medical Education. 2018 [acesso em 2021 nov 11];18(152):1-8. Disponível em: https://bmcmededuc.biomedcentral.com/track/pdf/10.1186/s12909-018-1264-5.pdf.

19. Wallace S, Clark M, White J. 'It's on my iPhone': attitudes to the use of mobile computing devices in medical education, a mixed-methods study. BMJ Open. 2012 [acesso em 2021 nov 11];2(4):1-7. Disponível em: http://dx.doi.org/10.1136/bmjopen-2012-001099.

20. Silva LAA, Schmidt SMS, Noal HC, Signor E, Gomes IEM. Avaliação da educação permanente no processo de trabalho em saúde. Trab Educ Saúde. 2016;14(3):765-781. https://doi: 10.1590/1981-7746-sol00015

21. Magalhães W, Costa C, Sachett J, Barbosa HO, Ábia B, Neto AM. Desafios e soluções tecnológicas da UNA-SUS/UEA na qualificação dos profissionais de saúde da região amazônica. In: Universidade Federal do Maranhão. UNA-SUS/UFMA. Experiências exitosas da Rede UNA-SUS: trajetórias de fortalecimento e consolidação da Educação Permanente em Saúde no Brasil / Organização de Francisco Eduardo de Campos. [*et al*..]. - São Luís: EDUFMA, p. 125-140, 2017.

22. Gasque KCS, Rodrigues MMS, Lemos AF, Araújo DG. Sistema UNA-SUS como ferramenta de democratização da Educação Permanente em Saúde: perfil dos usuários e capilarização dos cursos autoinstrucionais. Rev Bras Aprend Aberta. 2020 [acesso em 2021 nov 11]. Disponível em: http://seer.abed.net.br/index.php/RBAAD/article/view/476/385.

23. Conselho Federal de Nutricionistas (CFN). Inserção Profissional dos Nutricionistas no Brasil. Ministério do Desenvolvimento Social. Brasília, 2017. [acesso em 2021 nov 11]. Disponível em: https://www.cfn.org.br/wp-content/uploads/2019/05/CARTILHA%20CFN_VERSAO_DIGITAL.pdf?fbclid=IwAR0uypYRdbnoFbs_aR4PIAKygN3PC4-BUFJfPCD2tszfAXtxG1y0KE1HvLs.

24. Rauber F, Jaime PC. Promoção da alimentação adequada e saudável. In: Jaime PC. Políticas públicas de alimentação e nutrição. 1. ed. Rio de Janeiro: Atheneu, p.73-80, 2019.

25. Moura JWS, Vasconcelos EMR, Vasconcelos CMR Promoção da alimentação complementar saudável em menores de dois anos por enfermeiros: revisão integrativa. Rev. Enferm. Digit. Cuid. Promoção Saúde. 2021 [acesso em 2021 nov 11];3(2):1-8. Disponível em: https://doi.org/10.5935/2446-5682.20210019.

26. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. [acesso em 2021 nov 11]. Disponível em: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020.

27. UDEMY. Special Report. *Online education steps up: what the world is learning* (from home). 2020 [acesso em 2021 nov 11]. Disponível em: https://research.udemy.com/wp-content/uploads/2020/04/Online-Education-Steps-Up-2020-2021-Rebrand-v2-gs.pdf.

28. Silva A, Santos AM, Cortez E,Cordeiro BC. Limites e possibilidades do ensino à distância (EaD) na educação permanente em saúde: revisão integrativa. Ciênc. saúde coletiva. 2015;20(4):1099-1107. https://doi: 10.1590/1413-81232015204.17832013

29. Santos MJ, Jurberg C. Aspectos da Educação a Distância em Saúde no Brasil: Uma Análise das Publicações (2007 a 2014). Revista Ciências & Ideias. 2018;8(2):205-216. https://doi: 10.22407/2176-1477/2017v8i2.474

30. Vianna LJ, Ataide CA, Ferreira MC. Educação a distância no Brasil: Cotidiano, Prática, Avanços e Perspectivas. ENFOPE. 2015 [acesso em 2021 nov 11]; 8(1). Disponível em: https://eventos.set.edu.br/enfope/article/viewFile/1635/176.

31. Ferreira M, Carneiro T. A institucionalização da Educação a Distância no Ensino Superior Público Brasileiro: análise do Sistema Universidade Aberta do Brasil. Educação Unisinos. 2015;19(2):228-242.

32. Mussio SC. Reflexões sobre as modalidades de estudo na educação a distância: benefícios e limitações. Revista EDaPECI São Cristóvão (SE). 2020;20(1):119-129.

33. Santos AM. Educação à distância: análise dos desafios futuros. Braz. J. of Develop. 2020;6(7):45341-45354. https://doi:10.34117/bjdv6n7-233

34. Ferreira L, Barbosa JSA, Esposti CDD, et al. Educação Permanente em Saúde na atenção primária: uma revisão integrativa da literatura. Saúde debate. 2019 [acesso em 2021 nov 11];43(120):1-17. Disponível em: https://doi.org/10.1590/0103-1104201912017.

35. Cavalcante RB, Gontijo TL, Silva LTC, et al. Experiências de enfermeiros na educação a distância: um olhar sobre as dimensões interação e autonomia. Cogitare Enfermagem. 2016 [acesso em 2021 nov 11];21(2):1-9. Disponível em: https://revistas.ufpr.br/cogitare/article/view/44756/.

36. Pinto HÁ, Ferla AA, Ceccim RB, Florêncio AR, Barbosa MG, Stédile NLR, et al. Atenção Básica e Educação Permanente em Saúde: cenário apontado pelo Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica (PMAQ-AB). Divulgação em Saúde para Debate. 2014;51:145-160.

37. Farias QLT, Rocha SP, Cavalcante ASP, et al. Implicações das tecnologias de informação e comunicação no processo de educação permanente em saúde. Revista Eletrônica de Comunicação, Informação e Inovação em Saúde. 2017 [acesso em 2021 nov 11];11(4):1-11. Disponível em: https://www.reciis.icict.fiocruz.br/index.php/reciis/article/view/1261.

38. Santos AF, Sobrinho Fonseca D, Araujo LL, et al. Incorporação de Tecnologias de Informação e Comunicação e qualidade na atenção básica em saúde no Brasil. Cadernos de Saúde Pública. 2017 [acesso em 2021 nov 11];33(5):1-14. Disponível em: http://www.scielo.br/scielo.php?pid=S0102-311X2017000505003&script=sci_abstract&tlng=pt.

39. Ferreira VM, Andrade LI, Diniz RCS, Karklins EO, Miranda LMP, Ramos LHP, et al. Avaliação epidemiológica das regiões do Brasil na pandemia de COVID-19. Revista Eletrônica Acervo Saúde. 2021;13(4). https://doi: 10.25248/REAS.e7137.2021

40. Brasil. Ministério da Saúde. Portaria nº 2.761, de 19 de Novembro de 2013. Institui a Política Nacional de Educação Popular em Saúde no âmbito do Sistema Único de saúde (PNEPS-SUS). Brasília: Ministério da Saúde, 2013b.

41. Sanches P. Práticas grupais e promoção da saúde: estratégias, contribuição e desafios. 2018. 73p. Dissertação (Mestrado em Saúde da Comunidade) – Faculdade de Medicina, Universidade de São Paulo, Ribeirão Preto, SP, 2018.

Contributors

SILVA AR participated in the data collection and entry. data analysis and interpretation. writing of the manuscript. revision of the final version and approval for publication. LOPES MS participated in the research design. supervision of data collection. interpretation of data. revision of the manuscript. revision of the final version and approval for publication. FERREIRA NL and FREITAS PP participated in the research design. interpretation of data. revision of the manuscript. revision of the final version and approval for publication. LOPES ACS participated in the conception and design of the research. obtaining funding. administrative. technical and material support of the research. revision of the manuscript. revision of the final version and approval for publication.

Conflict of Interest: The authors declare that there is no conflict of interest

Received: March 24. 2022
Accepted: August 31. 2022