Journal of Nursing
UFPE On Line
ISSN: 1981-8963

J Nurs UFPE on line.
2020;14:e244271
DOI: 10.5205/1981-8963.2020.244271
https://periodicos.ufpe.br/revistas/revistaenfermagem

CASE REPORT ARTICLE

EDUCATIONAL TECHNOLOGY BUILDING UP: PROMOTING KNOWLEDGE ON DASH DIET

CONSTRUÇÃO DE TECNOLOGIA EDUCACIONAL: PROMOÇÃO DO CONHECIMENTO SOBRE DIETA DASH

CONSTRUCCIÓN DE TECNOLOGÍA EDUCATIVA: PROMOCIÓN DEL CONOCIMIENTO SOBRE LA DIETA DASH

Francisco João de Carvalho Neto[1], *Vitória Eduarda Silva Rodrigues*[2], *Francisco Gerlai Lima Oliveira*[3], *Maria Karolayne de Araujo Pereira*[4], *Ingryd Hariel da Silva Siqueira Barbosa*[5], *Juliana Holanda Fontes*[6], *Dinah Alencar Melo Araújo* [7], *Andressa Suelly Saturnino de Oliveira*[8]

ABSTRACT

Objective: to describe the process for building up an educational vídeo as health promotion tool on DASH diet. ***Method:*** this is a descriptive study, of the experience report type, carried out in five stages: orientation of academics on the topic of the video; bibliographic survey; construction and validation of the script; video recording and editing. The data was analyzed from a descriptive perspective. ***Results:*** an educational video was obtained that addressed the DASH diet in a clear and understandable way, covering definitions, applications, benefits, possibility of following and encouraging physical activity. ***Conclusion:*** it is believed that the video proved to be a tool that helps the population in the acquisition knowledge essential to the adoption of a healthy lifestyle, as it is a way to disseminate information in an attractive, simple, dynamic and democratic way. ***Descriptors*:** Educational Technology; Health Promotion; DASH Diet; Arterial Hypertension; Health Education; Chronic Disease.

RESUMO

Objetivo*:** descrever o processo de construção de um vídeo educacional como ferramenta de promoção da saúde sobre dieta DASH. ***Método*:** trata-se de um estudo descritivo, do tipo relato de experiência, concretizado em cinco etapas: orientação dos acadêmicos sobre tema do vídeo; levantamento bibliográfico; construção e validação do roteiro; gravação e edição do vídeo. Os dados foram analisados sob a perspectiva descritiva. ***Resultados*:** obteve-se vídeo educacional que abordou a dieta DASH de forma clara e compreensível, abrangendo definições, aplicações, benefícios, possibilidade de seguir e incentivo à atividade física ***Conclusão: acredita-se que o vídeo demonstrou ser ferramenta que auxilia a população na aquisição de conhecimentos imprescindíveis à adoção de estilo de vida saudável, pois se constitui forma de disseminar informações de forma atrativa, simples, dinâmica e democrática. ***Descritores*:** Tecnologia Educativa; Promoção da Saúde; Dieta DASH; Hipertensão Arterial; Educação em Saúde; Doença Crônica.

RESUMEN

Objetivo: describir el proceso de construcción de un video educativo como una herramienta de promoción de la salud en la dieta DASH. ***Método:*** se trata de un estudio descriptivo, tipo de informe de experiencia, realizado en cinco etapas: orientación de académicos sobre el tema del video; encuesta bibliográfica; construcción y validación del guión; grabación y edición de video. Los datos fueron analizados desde una perspectiva descriptiva. ***Resultados:*** se obtuvo un video educativo que abordaba la dieta DASH de una manera clara y comprensible, cubriendo definiciones, aplicaciones, beneficios, la posibilidad de seguir y fomentar la actividad física. ***Conclusión:*** se cree que el video demostró ser una herramienta que ayuda a la población en la adquisición de conocimiento esencial para la adopción de un estilo de vida saludable, ya que es una forma de difundir información de una manera atractiva, simple, dinámica y democrática. ***Descriptores*:** Tecnología Educativa; Promoción de la Salud; Dieta DASH; Hipertención Arterial; Educación Saludable; Enfermedad Crónica.

[1,2,3,4,5,6,7,8] Federal University of Piauí/UFPI. Picos (PI), Brazil. [1]https://orcid.org/0000-0002-2011-5900 [2]https://orcid.org/0000-0001-9326-1178 [3]https://orcid.org/0000-0002-2887-2631 [4]https://orcid.org/0000-0002-9915-6843 [5]https://orcid.org/0000-0002-9094-2629 [6]https://orcid.org/0000-0003-0193-1221 [7]https://orcid.org/0000-0003-0922-349X [8]https://orcid.org/0000-0002-2675-515

How to cite this article
Carvalho Neto FJ de, Rodrigues VES, Oliveira FGL, Pereira MKA, Barbosa IHSS, Fontes JH, et al. Educational technology building up: promoting knowledge on DASH diet. J Nurs UFPE on line. 2020;14:e244271 DOI: https://doi.org/10.5205/1981-8963.2020.244271

INTRODUCTION

Arterial hypertension (AH) is a multifactorial clinical condition characterized by sustained elevation of blood pressure levels ≥ 140 and / or 90 mmHg. It is often associated with metabolic disorders, functional and/or structural changes in target organs, being aggravated by the presence of other risk factors, such as dyslipidemia, abdominal obesity, glucose intolerance and Diabetes Mellitus.[1]

AH has had a great impact on Brazilian and global morbidity and mortality and, according to data from the World Health Organization (2019), 1.13 billion people, worldwide, they have AH and around 7.1 million deaths occur annually, which corresponds to 13% of global mortality; still, less than one in five people have the problem under control.[2]

In this context, the DASH diet (Dietary Approaches to Stop Hypertension) constitutes a healthy eating pattern, created by American scientists in the 90s, to be tested in individuals diagnosed with AH.[3]

It is revealed that the DASH meal plan does not require special foods and instead provides daily and weekly nutritional goals. This plan emphasizes the consumption of vegetables, fruits and whole grains, including low-fat or low-fat dairy products, fish, poultry, beans, nuts and vegetable oils, advocating the reduction of red meat intake, sweets and drinks with sugar.[4] In addition, it is also advocated the reduction of sodium in the diet to about 1500 mg / day.[5]

It has been shown, in most clinical trials studying the DASH diet, that it has been associated with decreased blood pressure. In addition, there is evidence to show that the DASH diet also reduces the risk of adverse cardiac events, stroke, type 2 diabetes and obesity, and despite that, adherence to the diet is still low.[6,7]

It is reported that the most striking feature of the DASH diet is that it requires changes not only in the adoption of healthy eating habits, but also in lifestyle. In this scenario, educational videos are used as tools for the dissemination of information, which can stimulate changes in behavior, as they are easy and quick to access, which facilitates the educational process and improves the quality of life.

It is known that the production of educational videos directed to communities, with the aim of promoting health, through health education activities, serve to raise awareness among social groups about some problems and to interfere in behaviors in the face of health problems.[8]

In this perspective, recent advances in mobile technology (access to videos via cell phones, notebooks and tablets, for example) can facilitate the dissemination of accessible and engaging health education on a scale, thus increasing the potential impact of video-based educational tools.[9] Due to its versatility and applicability, educational video has been used as an effective strategy for health promotion.[8]

It is observed in the literature that the use of video as an educational resource is a promising strategy in the dissemination of knowledge, and this tool has the advantages of stimulating and capturing the viewer's attention through moving images and sound, in this way, being a valuable tool to be used by health professionals in the transmission of information and guidance. [10]

It was perceived, therefore, as necessary to build a digital health education technology on the DASH diet, aiming to contribute to the adoption of a change in the population's dietary pattern and lifestyle, since they are allies in controlling AH and, consequently, to reduce cardiovascular risks.

OBJECTIVE

- To describe the process for building up an educational vídeo as health promotion tool on DASH diet

METHOD

This is a descriptive study, a case report, with a theoretical-practical approach on the development of educational technology for health promotion on the DASH diet, created by undergraduate nursing students at the Federal University of Piauí (UFPI), Campus Picos, members of the TV Mais Saúde Extension Project. It is explained that it is a university extension project, which produces educational videos related to various topics in the health area, aiming to contribute to the expansion of assimilation and access to scientific knowledge.

It is detailed that the elaboration took place in five stages, namely: orientation of academics on the subject of the video; bibliographic survey and script construction; script validation; video recording and editing, steps that took place from February to May 2018.

The training of undergraduate students on the subject with a specialist in the field was listed as the first step. A teacher, a collaborator of the extension project, met with the group, explaining the theme and guiding the construction of the video script. In addition, a survey was made on the social network “Instagram”, based on the account created by the students of the extension project, in order to find out what doubts, comments and suggestions the population had about the proposal. The discussion with the group was complemented with these doubts.

Then, the bibliography was built for the construction of the video script. At this stage, a literature review was carried out, with a time frame from 2015 to 2019, at the Virtual Health Library (VHL), MEDLINE via PubMed and Scientific Eletronic Library Online (SciELO). The following descriptors were used: DASH diet; health promotion; educational technology and hypertension. Articles in full, theses, dissertations, resolutions and specific manuals were found for the theme investigated. In addition, searches were made on national websites such as: the Ministry of Health and the Brazilian Societies of Hypertension and Cardiology. Based on this bibliographic survey, a script was prepared with up-to-date and secure information on the subject worked on.

Then, the script was sent for validation. In order to guarantee the validity of the analysis, two nurses experienced in the area were chosen according to the degree of mastery with the content covered in the video. Thus, the quality of the content of the material was assessed, using the Learning Object Review Instrument, version 2.0 (LORI 2.0), which consists of eight items of quality of a technology (quality, alignment with objectives, feedback, motivation, presentation, usability, accessibility and compliance).[11] The proposed changes were incorporated and considered relevant to the roadmap.

The video was recorded after that. We tried to use an accessible language, easy to understand, respecting the heterogeneity of the public regarding the level of education. The video production stage took place in a study room at UFPI, in May 2018, using a semi-professional camera and a cell phone recorder to capture the audios. It is added that five people participated in the recording, academics of the referred study group, which included: two presenters; a camera operator; a lighting / sound operator and a scene assistant.

The last step was to edit the video. The material built for maintaining the quality of the information presented was duly edited, with the inclusion of editorial devices, such as images and animations, in order to increase attention and expand the viewers' perception, favoring the dynamism of the video.

Finally, the video was available for free on the "YouTube" video platform, from a channel created by the same group, called "TV Mais Saúde". You can access the video through the link: https://www.youtube.com/watch?v=2hfKlBIfyzI. The video was disseminated through social networks via WhatsApp, Instagram and Facebook applications.

RESULTS

The video in question begins with an informal conversation between friends about the attractive way in which the photo of a meal plate is presented on a social network as a way to attract public attention. At the end of this dialogue, a question is asked: "But what is the DASH diet?". This starts the explanation of what the diet is about: "What makes it special? It is the consumption of fruits and vegetables, whole grains, nuts and dairy products with a low fat content, rich in proteins, fibers and potassium, but low in saturated and trans fats and low in simple carbohydrates".[12]

It is questioned, continuing with the inquiries, if the diet is easy to adhere to, noting that it is not necessary to follow the diet completely to achieve its benefits. It is reported, according to the Brazilian Society of Hypertension that, in addition to being indicated for hypertensive patients, the DASH diet helps to lose weight, and this is a consequence of the better quality of food, especially in cases of bad eating habits, since it provides more satiety for having high amount of fibers and for its great variety.[3]

Restricted foods in the DASH diet were presented, for example, foods such as sugars and fats. Soon after, we talked about the foods recommended by the diet, which include lean dairy products, in addition to fruits and vegetables.[4] All these foods were incorporated into the video, in the form of images and / or animations, to make the video more attractive.

The last question was related to encouraging the practice of physical activity by diet. It is clarified that, initially not, however, after conducting associated studies, it was noted that, if there is a reduction in calories, salt consumption and the inclusion of physical activity, its effect is enhanced. Therefore, it is prescribed as a current practice, therefore, the diet together with other cardiovascular protection factors.[3,5]

It is noteworthy that, throughout the production, we tried to use a clear and objective language, considering the level of education of the varied public, given that a large portion of the population has few years of schooling. In the video elaborated, the development of digital technologies on DASH diet as a health promotion tool was approached, demanding not only a change in the dietary pattern of individuals, but also in the lifestyle and adoption of a healthy way of life. The diet is guided by eating about five servings of vegetables daily; about five servings of fruit a day; carbohydrates - seven servings a day; low-fat dairy products - about two servings a day; lean meat products - about two or less servings a day; nuts and seeds - two to three times a week.[5]

The video in question was published on the group's own channel, Canal TV Mais Saúde, on YouTube, a page widely accessed on the internet, for, among other purposes, obtaining information. It was, therefore, an ideal tool for the dissemination of knowledge in all age groups. It is noteworthy that, from the day it was published (May 29, 2018), until October 2019, the video had 1,134 views.

DISCUSSION

The DASH Dietary Guidelines of 2015 recommends the DASH diet as one of the diet plans characterized as dynamic, understandable and closer to the reality of the public. A study provided support for the recommendations of the Advisory Committee on Dietary Guidelines, highlighting that the individual does not need to follow a single diet plan to contemplate healthy eating patterns.[13]

The DASH diet is an accessible and applicable dietary strategy, which can be incorporated into the routine of the population with AH. However, a low adherence to this intervention is observed, mainly caused by the lack of knowledge of the benefits of this dietary pattern, both by the population and by health professionals.[14]

It has been shown that, in addition to reducing blood pressure, by the DASH dietary pattern, in several cohort studies, a decreasing effect on low-density lipoprotein-cholesterol (LDL), among other cardiometabolic risk factors (through clinical trials) randomized trials), which is associated with reductions in diabetes and cardiovascular disease.[15]

It is understood that AH is the main risk factor for the development of cardiovascular diseases and other events, such as sudden death, stroke, acute myocardial infarction, heart failure, peripheral arterial disease and chronic, fatal and non fatalchronic kidney disease.[1,17]

It is warned that, according to the Ministry of Health, in 2017, there were more than 302 thousand deaths related to AH and, in 2018, 24.7% of the population living in Brazilian capitals stated they had a diagnosis of the disease. It was also shown by preliminary data from the Mortality Information System (MIS), that in 2017, Brazil recorded 141,878 deaths due to AH or causes attributable to it, a large part of these deaths is preventable and 37% of these deaths are early.[16]

It was pointed out, by the Vigitel survey in 2018, that people with less education are the most affected by AH and that, of the public with less than eight years of study, 42.5% suffer from the disease,[16] fact by which the information contained in the information technologies must be adapted, since almost all people, currently, regardless of social class, have access to digital media.

In this perspective, it is essential to bet on ways to bring a change in lifestyle to the population, and one way of carrying out this action is through the construction of educational videos, since they are instruments of great educational potential, as well as make it possible to share and express knowledge in an instant and comprehensive way. It is believed that Information and Communication Technologies (ICT) strengthen and make the teaching-learning process dynamic.[8] They can also be used as an educational tool in health education strategies to increase the reach of the target audience, with easy access and applicability, due to its availability online.[18]

The educational video thought as an activity of health education contributes to strengthen knowledge, providing the patient with the elaboration of care in their own way and, through the understanding of the information received, they have sufficient autonomy and knowledge to build a unique way of care, based on their beliefs, values, affinities, bearing in mind the socioeconomic and cultural environment in which they live.[19]

It is understood that one of the principles of the National Health Promotion Policy is empowerment, which refers to the intervention process that encourages individuals and the community to acquire control of decisions and choices. In addition, it is detailed that one of the operational axes of the policy, understood as strategies to implement health promotion actions, is the production and dissemination of knowledge.[20] In this way, there are, in technological instruments, essential ways to enable the population to acquire these skills.

It is concluded that, corroborating with this, a study that an empowered community recognizes and prioritizes health education and the behaviors associated with better results. They also become valuable partners in the dissemination of their own health education content, as the approach to information through videos promotes the improvement of health awareness.[9]

It is considered that there are a number of potential barriers to the more widespread adoption of DASH, such as patients who have not been educated regarding the benefits of dietary intervention.[3] It is noted that, in general, regardless of the diagnostic status, individuals with AH do not follow the DASH diet guidelines, showing that these individuals are insufficiently informed about the diet or not informed at all.[21]

In this context, such information could be made available to the population through digital media, since these are democratic forms of access to knowledge. This statement was corroborated by a video of just over eight minutes in length on issues related to coronary artery disease, in the Bengali

language, significantly improving viewers' knowledge and attitudes in the community environment in the city center of London.[22]

CONCLUSION

It is essential to use technologies to facilitate health education practices and, thus, ensure the transmission of knowledge in an effective manner. It is known that, with the use of the internet, people have easy access to any type of information, making it interesting to use audiovisual resources for the transmission of correct information and that have the purpose of improving or promoting quality of life to people.

It is pointed out that, for the elaboration of the educational material, the involved members had as difficulties the lack of modern equipment, an appropriate recording studio and the lack of a professional video editor, which ended up demanding more time for the preparation of the same. It was perceived, as facilities, the reach of the video through the internet and the availability of teachers with knowledge on the subject for the validation of the script.

It was found that the development of educational technology as an effective strategy for health promotion on the DASH diet is useful, given the major public health problem that is AH. It is demonstrated, with the exception of the steps taken for the production of the video, mainly referring to bibliographic survey in precise databases and validation by qualified professionals, that the material can be used as a guide for safe information.

It is concluded, moreover, that it proved to be a tool of great potential to help the population in the acquisition of knowledge that are essential to the adoption of a healthy lifestyle, since the majority of the population is currently directly linked to means that facilitate the visualization of technologies like the one used at work. Thus, information could be disseminated in an attractive, simple, dynamic and democratic way.

REFERENCES

1. Sociedade Brasileira de Cardiologia. 7ª Diretriz Brasileira de Hipertensão Arterial. Arq Bras Cardiol. 2017 Sept;107(3):1769-80. DOI: 10.5935/abc.20160140

2. World Health Organization. Hypertension [Internet]. Geneva: WHO; 2019 [cited 2019 Aug 10]. Available from: https://www.who.int/health-topics/hypertension/

3. Gowdak M. 10 aspectos relevantes da dieta Dash [Internet]. São Paulo: SBH; [2020]. Available from: http://www.sbh.org.br/vidasaudavel/artigo/10_aspectos_relevantes_da_dieta_dash.html

4. National Heart, Lung and Blood Institute. DASH Eating Plan [Internet]. Bethesda: NIH; 2019 [cited 2019 Nov 21]. Available from: https://www.nhlbi.nih.gov/health-topics/dash-eating-plan

5. Challa HJ, Tadi P, Uppaluri KR. DASH Diet (Dietary Approaches to Stop Hypertension) [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 [cited 2019 Aug 10]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482514/

6. Wang T, Heianza Y, Sun D, Huang T, Ma W, Rimm EB, et al. Improving adherence to healthy dietary patterns, genetic risk, and long term weight gain: gene-diet interaction analysis in two prospective cohort studies. BMJ. 2018 Jan; 360:j5644. DOI: 10.1136/bmj.j5644

7. Mahdavi R, Bagheri AA, Abadi MAJ, Namazi N. Perceived barriers to following dietary recommendations in hypertensive patients. J Am Coll Nutr. 2017 Mar/Apr;36(3):193-9. DOI: 10.1080/07315724.2014.966176

8. Rodrigues Junior JC, Rebouças CBA, Castro RCMB, Oliveira PMP, Almeida PC, Pagliuca LMF. Construction of video education for the promotion of eye health in schoolers. Texto contexto-enferm. 2017 July;26(2):e06760015. DOI: 10.1590/0104-07072017006760015

9. Adam M, McMahon SA, Prober C, Bärnighausen T. Human-centered design of video-based health education: an iterative, collaborative, community-based approach. J Med Internet Res. 2019 Jan; 21(1):e12128. DOI: 10.2196/12128

10. Braga FTMM, Garbin LM, Marmol MT, Khouri VY, Vasques CI, Carvalho EC. Oral hygiene in chemotherapy patients: construction and validation of an educational video. J Nurs UFPE on line. 2014 Oct;8(10):3331-9. DOI: 10.5205/reuol.6039-55477-1-ED.0810201411

11. Leacock TL, Nesbit JC. A framework for evaluating the quality of multimedia learning resources. Educ Tech Societ [Internet]. 2007 Apr [cited 2019 Aug 11];10(2):44-59. Available from: http://www.sfu.ca/~jcnesbit/articles/LeacockNesbit2007.pdf

12. Bloch MJ. The Dietary Approaches to Stop Hypertension (DASH) diet-Promise Unmet. J Am Soc Hypertens. 2017 June;11(6):323-4. DOI: 10.1016/j.jash.2017.04.011

13. Sotos-Prieto M, Bhupathiraju SN, Mattei J, Fung TT, Li Y, Pan A, *et al*. Association of changes in diet quality with total and cause-specific mortality. N Engl J Med. 2017 July;377(2):143-53. DOI: 10.1056/NEJMoa1613502

14. Bricarello LP, Retondario A, Poltronieri F, Souza AM, Vasconcelos FAG. ASH (Dietary Approach to Stop Hypertension) diet: reflections on adherence and possible impacts on colletive

health. Ciênc Saúde Colet [Internet]. 2018 Oct [cited 2019 Aug 10]. Available from: http://www.cienciaesaudecoletiva.com.br/en/articles/dash-dietary-approach-to-stop-hypertension-diet-reflections-on-adherence-and-possible-impacts-on-colletive-health/16925

15. Siervo M, Lara J, Chowdhury S, Ashor A, Oggioni C, Mathers JC. Effects of the Dietary Approach to Stop Hypertension (DASH) diet on cardiovascular risk factors: e systematic review and meta-analysis. Br J Nutr. 2015 Jan;113:01–15. DOI: 10.1017/S0007114514003341

16. Ministério da Saúde (BR). Hipertensão é diagnosticada em 24,7% da população, segundo a pesquisa Vigitel [Internet]. Brasília: Ministério da Saúde; 2019 [cited 2019 Aug 10]. Available from: http://www.saude.gov.br/noticias/agencia-saude/45446-no-brasil-388-pessoas-morrem-por-dia-por-hipertensao

17. Weber MA, Schiffrin EL, White WB, Mann S, Lindholm LH, Kenerson JG, *et al*. Clinical practice guidelines for the management of hypertension in the community: a statement by the American Society of Hypertension and the International Society of Hypertension. J Clin Hypertens (Greenwich). 2014 Jan;16(1):14-26. DOI: 10.1111/jch.12237

18. Azeredo LG, Diaz CMG, Souza MHT, Costenaro RGS, Portela JL. Construction and validation of educational technology about congenital syphilis. Res Soc Dev. 2019 Oct/Nov;8(12):e458121939. DOI: 10.33448/rsd-v8i12.1939

19. Dalmolin A, Girardon-Perlini NMO, Coppetti LC, Rossato GC, Gomes JS, Silva MEN. Educational video as a healthcare education resource for people with colostomy and their families. Rev Gaúcha Enferm. 2016 Apr;37(Spe):e68373. DOI: 10.1590/1983-1447.2016.esp.68373

20. Ministério da Saúde (BR), Gabinete do Ministro. Portaria nº 2.446, de 11 de novembro de 2014. Redefine a Política Nacional de Promoção da Saúde (PNPS) [Internet]. Brasília: Ministério da Saúde; 2014 [cited 2019 Aug 10]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2014/prt2446_11_11_2014.html

21. Kim H, Andrade FCD. Diagnostic status of hypertension on the adherence to the dietary approaches to stop hypertension (DASH) diet. Prev Med Rep. 2016 Dec;4:525–31. DOI: 10.1016/j.pmedr.2016.09.009

22. Latif S, Ahmed I, Amin MS, Syed I, Ahmed N. Exploring the potential impact of health promotion videos as a low cost intervention to reduce health inequalities: a pilot before and after study on Bangladeshis in inner-city London. London J Prim Care. 2016 Aug;8(4):66–71. DOI: 10.1080/17571472.2016.1208382

Corresponding author
Francisco João de Carvalho Neto
Email: franciscojoaodecarvalhoneto@gmail.com

Submission: 2020/02/15
Accepted: 2020/04/16