









CASE REPORT ARTICLE

EDUCATIONAL TECHNOLOGY ON HOME MEDICATION DISPOSAL
TECNOLOGIA EDUCACIONAL SOBRE DESCARTE DOMICILIAR DE MEDICAMENTOS
TECNOLOGÍA EDUCATIVA SOBRE LA ELIMINACIÓN DE MEDICAMENTOS EN CASA

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ABSTRACT









Objective: to report the experience of undergraduate Nursing students in the development of an educational technology on home medication disposal. **Method:** this is a descriptive study, classified as a case report referring to the development of a video with the theme: "Home medication disposal", performed by nursing students who are members of the Extension Project "Integration of educational technologies, information and communication for health promotion". The video was developed in five stages: instruction of undergraduate students on the subject; development of the video script; script validation by two specialists; video recording and editing. **Results:** the theme was addressed in the video in a clear, succinct and understandable manner, making a warning regarding the consequences of incorrect disposal of medication, as well as guiding where to dispose of them correctly. **Conclusion:** it is essential to empower the population regarding the appropriate way to dispose of medications, since incorrect disposal is a public health problem in Brazil. **Descriptors:** Educational Technology; Pharmaceutical Preparations; Telemedicine; Waste Management; Health Education; Residence Characteristics.

RESUMO

Objetivo: relatar a experiência de graduandos de Enfermagem na construção de uma tecnologia educacional sobre descarte domiciliar de medicamentos. **Método:** trata-se de um estudo descritivo, tipo relato de experiência, referente à produção de um vídeo com o tema: "Descarte domiciliar de medicamentos", realizado por graduandos de Enfermagem integrantes do Projeto de Extensão "Integração de tecnologias educativas, informação e comunicação para promoção da saúde". Elaborou-se o vídeo em cinco etapas: instrução dos graduandos sobre a temática; construção do roteiro do vídeo; validação do roteiro por dois especialistas; gravação do vídeo e edição. **Resultados:** abordou-se a temática, no vídeo, de forma clara, sucinta e compreensível, fazendo um alerta concernente às consequências do descarte incorreto de medicamentos, assim como orientando onde fazer o descarte correto. **Conclusão:** torna-se imprescindível empoderar a população a respeito da forma apropriada de descartar os medicamentos visto que o descarte incorreto se constitui problema de saúde pública no Brasil. **Descritores:** Tecnologia Educacional; Preparações Farmacêuticas; Telemedicina; Gerenciamento de Resíduos; Educação em Saúde; Características de Residência.

RESUMEN

Objetivo: informar la experiencia de estudiantes de Enfermería en la construcción de una tecnología educativa sobre eliminación de medicamentos en el hogar. **Método:** este es un estudio descriptivo, como un informe de experiencia que se refiere a la producción de un video con el tema: "Eliminación de medicamentos en el hogar", realizado por estudiantes de Enfermería que forman parte del Proyecto de Extensión Proyecto de Extensión "Integración de tecnologías educativas, información y comunicación para la promoción de la salud". El video fue preparado en cinco etapas: instrucción de estudiantes universitarios sobre el tema; construcción del guion del video; validación de guiones por dos especialistas; grabación y edición de video. **Resultados:** el tema fue abordado en el video de una manera clara, sucinta y comprensible, alertando sobre las consecuencias de la eliminación incorrecta de los medicamentos, y guiando dónde hacer la eliminación correcta. **Conclusión:** es esencial empoderar a la población con respecto a la forma adecuada de deshacerse de los medicamentos, ya que la eliminación incorrecta es un problema de salud pública en Brasil. **Descriptor:** Tecnología Educacional; Preparaciones Farmacéuticas; Telemedicina; Administración de Residuos; Educación en Salud; Características de la Residência.

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INTRODUCTION

The use of medication becomes essential for the maintenance of health since the medication is a technology that is inherent to health care. However, its access, use and disposal are becoming a complex problem for public health. It is pointed out that, currently, there are few strategies aimed at raising awareness about the disposal of medications in Brazil.¹

In this sense, it is believed that solid residues of pharmaceutical origin are of public health interest. Approximately 20% of the medication used by the Brazilian population are discarded in household waste or thrown into the sewage network.² It is essential, therefore, to promote health education actions and correct management of pharmaceutical residues in order to minimize the inappropriate disposal of medication. This includes measures that encourage the rational use and fractionation of medications, as well as actions such as the collection and treatment of household waste, preventing it from being disposed of in garbage or in sewage systems.³

It is known that the promotion of educational actions aimed at health education and the correct management of waste are a strategy used by health professionals to raise public awareness of the disposal of pharmaceutical waste. This initiative involves clarifying for the community about the implications of inappropriate disposal and guidance on the toxic effects of these substances on public health and environmental balance. Thus, the individual is encouraged about the rational use of medication and actions such as waste collection and treatment.⁴

In this context, the Information and Communication Technologies (ICTs) can be mentioned, which are technological resources that strengthen and make the teaching and learning process dynamic, presenting the contents clearly. The production of educational videos directed to communities is served, with the aim of promoting health, through health education activities, to sensitize social groups about some problems and to interfere in behaviors in the face of health problems.

In addition, immediate behavior changes can occur, as it is an easily accessible means, facilitating the educational process and improving the quality of health care.⁵ In this perspective, the educational video also allows the use of different methodological resources that help in memorizing information and building learning in a playful and attractive way.⁶

It is evident, considering that a large part of the population is unaware and / or is not oriented to dispose of medication at home properly, which is necessary, in addition to educational campaigns, the use of strategies that promote access to

information in a simple way for different audiences, thus justifying the importance of this study.

OBJECTIVE

- To report the experience of undergraduate Nursing students in the development of an educational technology on home medication disposal.

METHOD

It is a descriptive study, classified as a case report, in which a reflection is experienced by undergraduate nursing students who are members of the Extension Project "Integration of educational technologies, information and communication for health promotion", of the Federal University of Piau  / FUPI, in the development of an educational video with the theme: "Home medication disposal", held in August 2018.

Educational videos related to various topics are produced by the aforementioned University Extension Project, aiming to contribute to the expansion of assimilation and access to scientific knowledge, as well as to disseminate this knowledge to the community through the dissemination of videos.

For the recording of the aforementioned video, a scenario, a camera, microphones, lamps, editing programs and a cell phone were used. The video preparation methodology was organized in five steps:

Step 1 - instruction of undergraduate students on the subject with a specialist in the field. A collaborating professor of the referred 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 an account created by the students of the extension project, in order to find out what doubts, comments and suggestions the population had about the theme. The specialist's discussion with the group was complemented by means of these doubts;

Step 2 - bibliographic survey and elaboration of the video script. A literature survey was carried out, with a time frame from 2000 to 2018, in the Virtual Health Library (VHL) and in the Electronic Health Library (SciELO), corresponding to full articles, theses, dissertations, resolutions and specific manuals for the theme of medication disposal. Through this bibliographic survey, a script with up-to-date and secure information on the subject was made. It was found at this stage that, although the home disposal of disused or expired medications does not have a specific legal basis, the research showed some recommendations from the Ministry of Health and the National Health Surveillance Agency (ANVISA). It was also based on the foundation of the

technology created, in Law No. 12,305, of August 2, 2010, which institutes the National Solid Waste Policy (NSWP), in the Technical Regulation for Health Services Waste Management (TRHSWM)⁷ (RDC n° 306, 2004)⁸ and in the undergraduate thesis entitled “Self-reported knowledge and behavior about home medication disposal”:⁹

Step 3 - video script validation. In order to guarantee the validity of the script, by two nurses, specialists in the field, the quality of the content of the material, using the Learning Object Review Instrument (LORI 2.0), version 2.0, which consists of eight quality items of a technology (quality, alignment with objectives, feedback, motivation, presentation, usability, accessibility and compliance).¹⁰ The proposed changes were incorporated and considered relevant to the roadmap;

Step 4 - video recording. There was an attempt to use an accessible language, easy to understand, respecting the heterogeneity of the public in relation to the level of education. The video production stage took place in a study room at UFPI (Picos campus), in August 2018, using a semi-professional camera and a cell phone recorder to capture audio. It is reported that five people from the study group participated in the recording, which included: two presenters; a camera operator; a lighting / sound operator and a scene assistant;

Step 5 - Video editing. In this step, the material built for maintaining the quality of the information presented was edited, with the inclusion of animations and other editorial devices, favoring the dynamism of the video.

The video was made available for free, after the editing phase, on the YouTube video platform, from a channel created by the same group, called “*TV Mais Saúde*”. The video can be accessed by the following link: <https://www.youtube.com/watch?v=RVswwNTMh>. The video was disseminated through social networks via WhatsApp, Instagram and Facebook applications.

RESULTS

In the video in question, the National Solid Waste Policy (Law No. 12305, 2010), which provides for reverse logistics, that is, the return of the product to the manufacturer for proper disposal, however, the medication is not yet included in the current law.⁷ In Brazil, ANVISA warns that around 32 thousand tons of medications are despised by the population every year. It is also pointed out by the Brazilian Industrial Development Agency (ABDI), that the contamination of water, soil, flora and fauna is a consequence of this incorrect disposal, in addition to the direct risk to the health of the population that uses expired medications.¹⁹

It is warned that these chemicals, when exposed to adverse conditions of humidity, temperature and light, can turn into toxic substances and affect the balance of the environment, altering biogeochemical cycles and interfering in the webs and food chains.²⁰

It is revealed that one of the operational axes of the National Health Promotion Policy, understood as strategies to implement health promotion actions, is the production and dissemination of knowledge and knowledge (Ordinance No. 2,446, 2014).²³ In this way, there are, in technological instruments, essential ways to enable the population to acquire these skills.

The video published on the group's own channel, the “*TV Mais Saúde*” channel, was published on YouTube, since it is a means of dissemination that grows more and more, being accessed by many people for information. The video was viewed, since its publication until October 2019, 307 times, thus, the dissemination of videos with educational content in health is an ideal tool for the dissemination of knowledge to a diverse audience.

DISCUSSION

Technology has become part of society's routine, working in most day-to-day activities, whether at work, leisure or education. Through the use of social media, the flow of information is streamlined, contributing to the dissemination of knowledge. It is, in this sense, of paramount importance that health professionals seek to monitor this evolution so as not to lose the link with the community. It is understood that videos, blogs, Twitter and Instagram can be effective tools in building a connection between the professional and the community in a way that transmits important and necessary information for health in a simple, attractive and dynamic way.¹¹

Nursing is involved, in its work process, in the search and production of technological resources that support the practice of health education. These can contribute to the protagonism of the subject in their actions, using the content available in technology according to the personal demands and the pace of learning of each one.¹²

In this context, educational technologies are pointed out as important methodological tools to be used in the teaching process, and should be used in health education in order to facilitate and support the knowledge and health of the population.¹³

It is believed that the development of videos aimed at health education benefits not only those who will watch, but also those who participate in its construction. For this experience, students are required to seek information from reliable sources and develop their critical thinking so that they can be passed on. In addition, it is encouraged that it develops its creativity so that the media draws the attention of the public and they can understand

that information and incorporate it into their routine.

The demand for medications is substantially growing due to self-diagnosis and self-medication.¹⁴ Most people usually have what is called a “home pharmacy” in their homes, which is the accumulation of medication, forming a household stock. For this reason, remnants of medications can be generated due to the dispensing of a quantity higher than necessary for the treatment and free samples distributed by laboratories.¹⁵

The use of medications should be carried out under an appropriate prescription with pharmaceutical form, doses and duration of treatment. These should be dispensed under the appropriate conditions with the appropriate guidelines so that the customer acquires responsibilities for the use and disposal of them.¹⁶

Body damage accumulates with advancing age, making people more susceptible to various diseases. In this context, poly-medication appears, which is commonly practiced by older clients, who end up using memory and other unreliable methods to make use of this therapeutic resource.¹⁷

It is warned, however, that the general population does not have instructions on the correct disposal of medications and finds it difficult to do so properly, making this disposal in common garbage or sanitary sewage. It is believed that the use of educational technologies is an instrument capable of developing, in citizens, healthy habits and sustainable attitudes.¹⁸

It was found, in a survey conducted in 2017 with the population of a neighborhood in the municipality of Picos-Piauí, in 153 residences, about the disposal of medications, that 94% of the people interviewed were unaware of the correct place to perform the disposal of these medications; almost all people did not dispose of properly because they were unaware of the places of delivery or of public campaigns or advertisements about the places that collect expired medications. It is evident, therefore, that people dispose inappropriately due to lack of information.⁹

It is known that the main classes of discarded medications are analgesics (42%), antipyretics (30%) and flu (28%). This situation reflects the great ease of purchasing these medications in pharmacies, self-medication and high consumption of these medications. These medications are currently considered “emerging organic pollutants”.²¹

Inadequate disposal of medication with an environmental impact consists of taking into account that their presence can be identified both in water and in the soil. The discussion on pollution and the changes it causes to the environment has been increasingly encouraged to

achieve success in minimizing environmental impacts.¹⁵

Various types of medications are acquired by the population in general with some ease without proper knowledge about safe storage and disposal. It is clear, therefore, the need to educate and motivate people on these issues. Health professionals should engage in this task of health education for the population, especially in raising awareness of the importance of the correct disposal of medications.¹⁴

It is pointed out that a possibility for such an attitude is the production of educational videos directed to communities, aiming at health promotion, which serve to sensitize social groups about some problems and to interfere in behaviors in the face of health problems.⁵ It can be seen, in this perspective, that recent advances in mobile technology can facilitate the dissemination of accessible and engaging health education at scale, thus increasing the potential impact of video-based educational tools.²² Due to its versatility and applicability, educational video has been used as an effective strategy for health promotion.⁵

CONCLUSION

It is concluded that people are following technological advances and, increasingly, are connected, due to the ease of access to the internet. It is therefore necessary to use strategies that employ the various technologies and that are capable of reaching a larger number of people, so that they can be considered effective and achieve the proposed objectives.

The construction of the educational video was shown to be a successful experience for nursing students involved in the production process, since they were able to transmit information to the population in a dynamic and understandable way. In this way, the use of information technologies as a tool for promoting health of great value is pointed out, due to its ease of access and the greater reach of the public, allowing the use of a simple and accessible language and, with that, achieving greater understanding of the viewer and, consequently, greater dissemination of the learned content.

It is revealed that a difficulty encountered by nursing students involved in the production of this educational technology was the lack of more sophisticated technological resources. It is also noteworthy the difficulty in adapting the language to the public, as this is an activity that requires time for planning, recording, editing and reissuing the videos. It is noteworthy, with regard to facilities, that, through the internet, information reaches farther and reaches a greater number of people.

It is essential, given the high lack of information on the part of the population regarding the correct disposal of medications at

home, to empower these people regarding the proper form of disposal. In this context, educational video becomes an important resource for the learning of the population, while producing information concerning both the correct disposal and the consequences of inappropriate disposal for the environment and for oneself. It is believed that the educational technology built and validated contributes to the understanding of the target audience regarding the theme.

CONTRIBUTIONS

It is informed that all the authors contributed equally in the design of the research project, collection, analysis and discussion of the data, as well as in the writing and critical review of the content with intellectual contribution and in the approval of the final version of the study.

CONFLICT OF INTERESTS

Nothing to declare.

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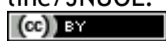
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