DIGITAL TECHNOLOGIES FOR HEALTH EDUCATION PRACTICES WITH CHILDREN AND ADOLESCENTS

Andressa da Silveira, Mariana Henrich Cazuni, Bruna Cardozo da Silva, Rodrigo Souza Balk e Lairany Monteiro dos Santos

ABSTRACT

Introduction: the use of digital technologies for health education practices with children and adolescents began to be used on a large scale, based on the need for social distancing generated by the COVID-19 pandemic. Objective: to know the perception of university students about the use of digital technologies for health education practices with children and adolescents. Method: qualitative, descriptive research, with university students belonging to nursing, physiotherapy and nutrition courses with previous experiences in research and extension, from the northwest region and the border of southern Brazil. Data collection took place in two stages, through a script prepared in Google Docs® for the purpose of characterizing the participants and the second stage through structured interviews in Google Meet®. The utterances were transcribed and subjected to thematic content analysis. Results: Two categories emerged “Use of digital media for education in times of pandemic” and “Use of digital technologies by children and adolescents”. Final considerations: from the perspective of university students, the use of digital technologies starts earlier and earlier, and they understand that health education practices through digital media were essential after the pandemic, for maintaining the bond, guidance, communication and autonomy for the care of children and adolescents.

Keywords: Digital Technology; Child; Adolescent; Covid-19.

RESUMO

Introdução: o uso de tecnologias digitais para as práticas de educação em saúde com crianças e adolescentes passaram a ser utilizadas em larga escala, a partir da necessidade de distanciamento social gerada pela pandemia

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de COVID-19. Objetivo: conhecer a percepção de estudantes universitários acerca do uso de tecnologias digitais para as práticas de educação em saúde com crianças e adolescentes. Método: pesquisa qualitativa, descritiva, com estudantes universitários pertencentes aos cursos de enfermagem, fisioterapia e nutrição com vivências prévias em pesquisa e extensão, da região noroeste e da fronteira do sul do Brasil. A coleta de dados ocorreu em duas etapas, através de um roteiro elaborado no Google Docs® para fins de caracterização dos participantes e a segunda etapa por meio de entrevistas estruturadas no Google Meet®. As enunciação foram transcritas e submetidas à análise temática de conteúdo. Resultados: Emergiram duas categorias “Uso de mídias digitais para a educação em tempos de pandemia” e “Uso de tecnologias digitais por crianças e adolescentes”. Considerações finais: na perspectiva de estudantes universitários a utilização das tecnologias digitais começa cada vez mais cedo, e eles entendem que as práticas de educação em saúde por meio de mídias digitais foram essenciais a partir da pandemia, para a manutenção do vínculo, orientação, comunicação e autonomia para o cuidado de crianças e adolescentes.

**Palavras-chave:** Tecnologia digital; Criança; Adolescente; Covid-19.

**INTRODUCTION**

The Statute of the Child and the Adolescent (ECA) sets as child the ages up to twelve years of incomplete age and adolescents those between twelve and eighteen years of age (BRASIL, 1990). Infancy is a stage characterized by dreams, imagination and fantasies, in which the role of playing is part of children’s everyday life. The adolescence is associated with physiological, psychological and social changes, being considered a time of tension and discovery. Thus, children and adolescents are people undergoing a process of development that require full attention and care, and need qualified and appropriate assistance according to their age group (GOMES *et al.*, 2015).

The process of caring for children and adolescents can be a challenging and complex one, as they present specific requirements in each phase and are frequently exposed to different types of vulnerabilities, requiring protection and preventive actions. In such context, it is worth highlighting the role of health professionals in the development of the healthcare promotion directed to this public. To this end, the school is a favourable space for health education initiatives, as it enables the articulation of learning and the participation of students, parents, the school communities and society in general (RIBEIRO *et al.*, 2018; PEREIRA *et al.*, 2017).

For the effectiveness of health education actions, the social background in which the population is included, the age group, the educational level, among other aspects, should be considered. These actions should provide dialogue, and the interaction between professionals and the target audience, as well as a space for sharing experiences and health demands (GONÇALVES *et al.*, 2020; LENZA *et al.*, 2020). Furthermore, in the school context, it is crucial that health education actions include both professionals and families in the educational process, with a view to building knowledge that has an effect on becoming aware of care (PEREIRA *et al.*, 2017).

In this setting, health education is defined by the use of pedagogical techniques that aim at the construction of knowledge for the promotion of health care. Moreover, educational activities
are developed mainly by nursing, and it is recommendable that educational activity is carried out by a multiprofessional team, so that the population can adopt healthy habits, which have an influence on health promotion and disease and illness prevention (LA VICH et al., 2018; ARNEMANN et al., 2018).

From the arrival of the Coronavirus Disease 2019 (COVID-19) pandemic, short, medium and long-term emergency actions were essential, so that health education practices could be kept, even in the face of the inability of physical/face-to-face contact. For the population to have access to quality information, which would impact on health prevention and health promotion, educational activities started to be developed using digital technologies, from the use of digital media as represented by wide-ranging social networks (SILVA et al., 2021).

Hence, the use of digital technologies started to be widely used for the maintenance of teaching activities (BEZERRA, 2020). Furthermore, we emphasize the implementation of health education measures to control the spread of the pandemic in the country, where the information was conveyed in digital media (CECCON; SCHNEIDER, 2020). The technology contributed to the production of care, bond establishment, and enabled the development of health education initiatives, these being essential resources in the pandemic period (CECCON; SCHNEIDER, 2020).

We are nowadays witnessing the intensive introduction of technologies in various social contexts, and their increasingly frequent use, especially by the young population who attend schools and universities. These technologies are believed to be allies of health care and continuing education, allowing them to promote greater interaction between individuals, as they increase access to information and enhance communication (CLAUDINO et al., 2022).

As a result, the educational institutions had to review the methodology adopted, adapting to a new way of mediating the teaching-learning process, sustained by the digital media (NHANTUMBO, 2020). Consequently, the access to education through the use of digital technologies was overcome by challenges, including the difficulties in accessing the internet, learning about the use of digital media, the possibility and the resources for the development of online classes, and even the lack of understanding about the diversity of available technologies (CARDOSO, FERREIRA, BARBOSA, 2020; CORDEIRO, 2020).

Based on these assertions, the following question arises: how do university students perceive the use of digital technologies for health education practices with children and adolescents in times of pandemic?

This article aims to know the college students’ perception about the use of digital technologies for health education practices with children and adolescents.

METHOD

This is a research of qualitative, descriptive approach, with undergraduate students from the Northwestern region and the Southern border region of Brazil. These two regions were chosen
because they represent federal public institutions, which are references for public education in Rio Grande do Sul, including undergraduate courses in health sciences.

Inclusion criteria were used to be undergraduate students of health sciences, over 18 years of age, with institutional ties in one of the public universities, and who had access to digital platforms available for data collection. Students whose enrollment was locked or who were away for health reasons were excluded.

The research was conducted in two stages: the first, using a script developed in Google Docs® for the purpose of the characterization of the participants and to assist in the random selection of students for the interviews. Data collection occurred in the period from July to August 2020, through sociodemographic characterization with questions regarding the gender, age, region, origin, undergraduate course, semester, participation in teaching projects, research and extension, use of digital media and access to technologies. Thus, 45 students participated in this stage.

For the second moment, the structured interview was conducted, from a draw of the Google Docs® database. Thus, it was used as a criterion the theoretical saturation of data (MINAYO, 2017) and the inclusion of participants ceased, from the moment when there was no new information, totaling 18 interviewees.

The structured interviews with script were scheduled in advance, depending on the students’ availability, and developed in individual times on the Google Meet® platform. The interviews were conducted by the investigators, and the audiotapes were recorded on digital media, with an approximate average of 20 minutes each interview.

The recorded statements were transcribed in full in the Microsoft Word® program and subjected to thematic content analysis, which was developed from the implementation of the following steps: pre-analysis, material exploration, data processing and interpretation (BARDIN, 2018). It began with the acknowledgement of the material transcribed, followed by the organization of the empirical materials; then the reading of the text was performed and selection of the relevant content to the research objective in order to contemplate the pre-analysis. In the stage of material exploration, the coding occurred in units of record, which allowed developing the thematic categorization. From this step, the text excerpts were organized in a table, using the semantic affinities that gave rise to the categorization and subcategories (BARDIN, 2018).

In these cases, the letter E was used to maintain the participants’ identity, referring to the word “student” followed by the ordinal number corresponding to the order in which the interviews were carried out. The study began after the approval by the Ethics and Research Committee, where the ethical aspects described by Resolutions No. 466/2012 and No. 510/2016 (BRASIL, 2016) were recommended. The informed written consent form was made available in Google Docs®, the research only began after receiving approval by the research ethics committee under Certificate of Submission for Ethical Appreciation (CAAE) 86186518.5.0000.5346 and opinion 4,114,313.
RESULTS

From the total of 18 interviews collected, 9 (50%) students came from the Universidade Federal de Santa Maria campus of Palmeira das Missões, and 9 (50%) from the Universidade Federal do Pampa campus of Uruguaiana.

Among the undergraduate students, 14 (77.77%) were nursing undergraduate students, 3 (16.66%) were physiotherapy undergraduate students, and 1 (5.55%) was a nutrition undergraduate student. Of these, 15 (83.33%) are female and 3 (16.66%) are male.

The age range of the students varied between 20 and 28 years old. Regarding the participation in projects at the University, 17 (94.44%) participated in research, teaching and extension projects, and 1 (5.55%) participated only in an extension project.

Regarding the use of technologies, they are anchored through the enunciations, presented in two categories: “Use of digital media for education in times of pandemic” and “Use of digital technologies by children and adolescents”.

USE OF DIGITAL MEDIA FOR EDUCATION IN TIMES OF PANDEMIC

From the interviewed students, the use of technologies for health education can be an ally, even in the face of the impossibility of face-to-face contact in the context of the pandemic of COVID-19, according to the following speeches:

I think that today, at the moment we are [pandemic], it is one of the best alternatives! (E4)

The digital technologies and media are being used a lot at this moment [pandemic]. To have accessibility to be able to be feeding ourselves with contents in several platforms, with responsible and real resources, so that we can have a more complete education, and then, we seek to learn more, beyond the academic field! (E7)

Well, at the moment, seeing the pandemic, I see that it is a resource used by everyone at this time, to try to facilitate work, education, for everything... it is essential! (E8)

I believe they are good! And I think it facilitates a lot, for example, now that we are in a time of pandemic, it makes it easier, it helps a lot, because you don’t need to expose yourself. (E11)

It makes people’s lives easier nowadays [pandemic]. And digital media would be those things made from technology... like: websites, social networks, which also make people's lives easier, acting as a communication tool. (E12)

After the COVID-19 pandemic emerged, using digital media is the best option. (E18)
The enunciations of the participants also reveal that the use of digital technologies is beneficial to the exchange of information, besides being a strategy for mass communication, using the various resources available, as can be seen in the speeches below:

Ah, I think they are very important, they pass a lot of information. It is the easiest way to spread the information, it is there on Facebook, on Instagram and Youtube videos... (E1)

The digital media we normally use to access more people, today we manage, we know that there are people without access, who don’t have access, but the percentage of access is enormous! (E2)

They are resources that serve to help, to bring information... (E3)

All technologies we use today to communicate, whether it be social networks, websites and blogs... (E5)

For the people interviewed, the use of digital technologies is beneficial to the acquisition of knowledge, affecting the learning process. Therefore, in addition to communication and information sharing during the pandemic period, the opportunity to spread knowledge was highlighted.

We learn too, for education in times of pandemic is important. It is through the exchange of knowledge through digital technologies, with social networks, videos, posts... (E1)

I use it to learn a little bit more, because the networks [digital media] also have that purpose... (E6)

It is feasible to use the digital media, which we have these days, so that we can have an intellectual breakthrough! (E9)

Technologies and digital media can be used to communicate some content, some know-how to the wider public. (E10)

The informants presented the diversity of resources available through digital technologies. For them, besides communication, maintaining contact without physical exposure during the pandemic of COVID-19 and the exchange of information, it is still possible to build knowledge with the use of digital resources.

USE OF DIGITAL TECHNOLOGIES BY CHILDREN AND ADOLESCENTS

The interviewees’ statements reveal that for them, children and adolescents use digital technologies in their daily lives. Furthermore, they highlight factors that favour the use of these resources, as well as the ease of access.

I think it can be very beneficial, because we are living in a generation in which children are much more connected to technology! (E3)
I think that digital media came to make everybody’s life easier, in fact, years ago, the media came to make everybody’s life easier... and for children and adolescents, at this moment [pandemic], it is great! (E5)

It is something that many children and adolescents use, the vast majority use digital media, but they generally resort to digital media for other purposes... (E6)

I think it is great! And also teenagers, and they look for it a lot. I think it is very promising, a very strong tool! (E7)

Children are using these media much more than before, looking at a video, a film... a sheet of paper does not attract the attention as digital technologies do. (E8)

I think that children today have a lot of virtual [contact], I think even more than in person. I think it’s valid, I think today Facebook and Instagram are the most popular... (E9)

I think it is a great strategy! Because today children and adolescents are all using the internet, it’s all through mobile phones, computers, television... Children are very attached to mobile phones and I think it is a great strategy! (E11)

Children and adolescents are always using mobile phones and computers, and they know how to use them very well! (E13)

Eu acho que pode ser muito benéfico, pois a gente está vivendo em uma geração em que as crianças estão muito mais ligadas à tecnologia! (E3)

The use of digital technologies by children and adolescents are also emphasized as strategies for health education, since they are available resources in the daily lives of this population and can be beneficial to health promoting actions.

I think it can be very beneficial educational activities for health, because it is in social networks that children and adolescents are entering very often. .. (E3)

Digital media today is full of information, if the health or education professional is managing to reach children through digital media, it is in that period of quarantine and isolation. .. (E7)

It is a great strategy, because we see that adolescents and children are very connected to technology! What child doesn’t watch videos? These are very useful ways to reach this population [children and adolescents] and promote health promotion and prevention for them! (E10)

And I think that doing health education with them [children and adolescents] is something very positive, because everyone who opens Instagram will have access... (E14)

While the statements reveal the potential of using digital technologies, some participants praised the viability of this resource during the pandemic, but also that the ideal is the face-to-face contact with children and adolescents.

It is preferable to work with this public [children and adolescents] in person, but at the moment [pandemic] we are managing to do health education through technologies, virtually... (E5)
The ideal is to do health education in person. But I think it makes it much easier, for example, now that we are in a pandemic period, it helps a lot to disseminate content... (E12)

It is usually an activity that we learn in person, which would be like this. But at this time of the pandemic, it is the possible resource for the bond (E17)

Although in the university teaching process the contact with children and adolescents was face-to-face, due to the need for social distance because of the pandemic, health education through the use of digital technologies began to be used. Digital media were mentioned as strategies to disseminate content, health education and bonding.

**DISCUSSION**

With the emergence of the pandemic of COVID-19 and the need for social distancing among the population in order to avoid physical contact, there were significant changes in relation to communication, from the use of digital technologies. Thus, it was necessary to raise awareness among the population about strategies to maintain communication, bonding and socialization, especially for children and adolescents who were snatched from their routine. In this way, digital platforms and social media were key pieces for the dissemination of information and continuity of life in society (González, Tortolero, 2020).

The need to reduce the spread of the virus, culminated with the closure of teaching and learning spaces, with this, school activities began to operate online, from remote teaching, in order to meet the objectives and educational needs (Shah et al., 2020; Bittencourt, Albino, 2017). As consequences of social distancing, it was observed behavioral changes, including in relation to the mental health of the population, from episodes of anxiety, stress and distress (Ghosh et al., 2020). In view of this, the use of digital technologies contributed to minimize issues that compromise mental health.

Moreover, considering the specificity of the pandemic and the need for distance, the use of digital technologies enabled the maintenance of communication, the exchange of information and knowledge. As far as children and adolescents are concerned, the potential to bring entertainment, relaxation, information and knowledge should be considered. Thus, the use of technologies in educational practices extrapolates the traditional teaching model, contributing to the mediation of learning in a meaningful way (Lima, Araújo, 2021).

In the school environment, the insertion of technologies has been intensifying over the years, mainly due to public policies, such as those aimed at the use of computer labs and digital whiteboards. However, it is evident weaknesses in this context, regarding the infrastructure of public schools, in the physical aspect and internet connection, besides the teachers’ training without the proper preparation for the use of these strategies (Claudino et al., 2022).
With the relevant advance of these technologies, both in informal spaces and in educational institutions, it is perceived the need to develop studies that promote the understanding of their impact on society. Especially as part of the daily lives of children and adolescents, as it becomes a source of entertainment and knowledge and, consequently, influences in their habits (MONTEIRO, 2020). As for the digital media, it presents the possibility to find different types of information, aimed at different age groups. Therefore, it is necessary a supervision of the use of technologies, in addition to a preparation of parents and community in general, so that the content propagated is beneficial to the development of children and adolescents (PEREIRA, 2017; MONTEIRO, 2020).

Thus, it is possible that digital technologies are responsible for social contact, bonding, communication and learning, especially in times of pandemic. It is observed that, when used correctly, technologies bring benefits to children and adolescents, mediating educational practices, in building habits, awakening curiosity and instigating perception, memory, perception and reasoning (TOMÁS; CARVALHO, 2019). However, since this is a look at the use of technologies by children and adolescents, supervision is essential, including to assess the content, exposure time and use of technologies (LIMA, ARAÚJO, 2021).

Still, digital technologies are an important tool to promote the communication of school children and adolescents, mediate the practices of health education, since the information is present in these spaces and that from the pandemic of COVID-19 was an essential strategy for health promotion (FARIAS, MORAIS, MATOS, 2022).

The technologies take an important role in the lives of children and adolescents, being the main means of information and communication, in addition to its wide reach have the power to influence, so are ideal to carry information about health and healthy habits. Still, they facilitate access to health information, especially about more sensitive issues, considered even embarrassing, such as issues involving puberty (MENIN; PEDRO, 2021).

The teaching-learning strategies, from the use of technologies, combined with actions to promote care should contribute to the autonomy of the subjects, making them protagonists of their own care. Such methodologies emerge as strong enhancers of information on disease prevention and health promotion, providing opportunities for health professionals to reach larger audiences and promote the dissemination of health-related knowledge (MONTEIRO, 2020; PINTO et al., 2017). However, it is noteworthy the need to discuss the use of tools to be used, in order to excel in technologies that reach the population, equitably, which favor health promotion and disease prevention (NUNES et al., 2021).

In the same way, it is necessary that health professionals recognize the potential of technologies and realize the many possibilities for using these tools to reach the adolescent and child population, considering that digital media can promote health education (PINTO et al., 2017). In this sense, in addition to convey content that reaches the demands of children and adolescents, it is essential that health professionals who make up the multiprofessional team are prepared to use technologies in their daily lives (LIMA, ARAÚJO, 2021; FARIAS, MORAIS, MATOS, 2022).
Although the practices of health education are traditionally worked in the teaching process, in a face-to-face way, the advent of the pandemic brought new possibilities in view of the need for social distance. Thus, it is essential to promote attractive actions of health education, which enable the autonomy and the care process of children and adolescents, using the spaces of digital media to spread information and knowledge (FARIAS, MORAIS, MATOS, 2022).

Finally, it should be considered that the use of technologies, media and digital platforms occurs on a large scale, including the population of children and adolescents, who had their routine modified by social distance. However, the content that is addressed should bring benefits to this population, also contemplating guidelines on health care according to the level of understanding of children and adolescents.

FINAL CONSIDERATIONS

From the perspective of university students in the health sciences, the use of digital technologies begins increasingly earlier, and they understand that health education practices through digital media were essential from the pandemic, for the maintenance of the bond, guidance, communication and autonomy for the care of children and adolescents.

Among young university students, remote teaching practices are already a reality, the model imposed by the pandemic of COVID-19 suggests that these resources should be perpetuated after its end, including by enabling the exchange of knowledge. However, the factor of social inequality and ignorance about the use of technologies and digital media is observed as factors that generate barriers in this process.

As limitations of the study, it is noteworthy that it was conducted in only two educational institutions, not being possible to make generalizations. Finally, we suggest the development of health education activities based on digital media with children and adolescents, the implementation of teaching, research and extension activities so that digital technologies are disseminated in the academic training process in universities.

REFERENCES


