

ORIGINAL ARTICLE

State of the art of nursing education and the challenges to use remote technologies in the time of corona virus pandemic

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Abstract

Introduction: The Corona virus (COVID-19) pandemic caused, among others, the need for colleges and universities managers around the world to reinvent new ways of providing education preserving its good quality at the same time. With the new ordinances of the Ministry of Education and Health, all courses can use remote methodologies for the continuity on the current school year. With new challenges and paradigms emerging from this methodological proposal: provide for the user the feeling of immersion, of being in the class room, from the navigation and interaction in this virtual environment, at the same time that the educator, respecting the educational principles and the pedagogical approach that he believes, does not transform this moment into a simple distance education.

Objective: To describe the state of the art on nursing education and the challenges of using remote technologies in the time of Corona virus pandemic.

Methods: This is a reflective study based on secondary sources of literature relevant to the theme, considering articles from national and international journals and recent productions on education, health training, remote technologies, COVID-19 and public health.

Results: It is evident that experiencing the effects of the corona virus pandemic (COVID-19) in the health educational sector, especially in the field of nursing, goes beyond a structural reorganization of courses. It implies change attitude of managers, teachers and students to reformulate educational practices (sometimes with traditional tools), with innovative practices preserving a methodology that provides to the student criticality reflection, dialogue, bonding and interaction; elements that are part of a training aimed at transformation, empowerment and not just the transmission of knowledge. In this context, the COVID-19 pandemic caused paradigm shifts perhaps not yet overcome by health science institutions, because when they perceived themselves within a reality that generated changes in the political, economic, cultural and social aspects at a global level, they had to reinvent and insert new ways of teaching in their work process; they had to discuss different educational approaches and, given the needs to readjust health teaching methods, they inserted remote technologies as essential tools to meet the real need for continuity of classes in non-face-to-face model. For many, it is a challenge, as it currently permeates a reflection on the attention of distance learning in the field of nursing and other courses in the health area. However, as it opened up to discussions about new ways of teaching mediated by innovation, it can be said that this will be one of the greatest impact of the pandemic in benefit the education: the contribution of new information and communication technologies in the teaching-learning process for training in health, as well as the reflection on distance education and its concepts, differentiating it from the concepts of remote methodology and the use of technologies.

Conclusion: In nursing education, the discussion related to the use of remote technologies in the classroom has always been a point of debate. However, with the need to include these tools for the continuity of classes in the non-face-to-face model resulting from the social isolation strategy motivated by the pandemic of COVID-19, it can provide an opportunity to have a new look on the subject and perhaps there is an opportunity to expand the debate on the use of remote methodologies in health education, seeking a reflection on their interaction with the other teaching methods already implemented.

Keywords: COVID-19, changes, education, health training, nursing, technologies, innovations.

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Authors summary

Why was this study done?

The study was carried out to describe the state of the art on nursing education and the challenges of using remote technologies in the time of COVID-19 pandemic.

What did the researchers do and find?

The author carried out a reflective study on the non-pharmacological interventions necessary to face COVID-19, in particular, the need for social isolation and the suspension of higher education classes, highlighting the need to use remote methodologies for the return of these activities. Thus, the author reflected on the impacts of using those technologies in nursing education, based on the challenge of inserting these tools in health education.

What do these findings mean?

The findings point out that although the use of information and communication technologies in teaching is already widely discussed, for many it is still a challenge, as it currently permeates a reflection on the caution of distance learning in the field of nursing and other courses in the health field. However, as it opened up for discussions on new ways of teaching mediated by innovation, it can be said that this will be one of the biggest impact of the COVID-19 pandemic: the contribution of new information and communication technologies in the process of teaching/learning in health education techniques. Thus, this lived moment can be an opportunity to bring notes on the positive and negative impacts on the use of remote methodologies and provide reflection on these tools and the interaction with the other teaching methods already implemented.

INTRODUCTION

What to do in the face of a pandemic that transforms everyone's lives in political, economic, cultural and social aspects around the world, and that in the face of urgent needs for change, new ways of thinking/doing must be put into practice in a frightening way?

The challenges exposed in education through new ordinances allow courses, be they basic, technical and higher, to make use of remote technologies, never utilized before, as a teaching methodology. Thus, the institutions and their managers have had to reinvent and adapt to this new form of teaching, arising new needs for inclusion, management, of the faculty and students to work with new technologies; new for those who were not immersed in the virtual world, but for many and since some time ago, is a present reality seen as tools that promote the change of educational paradigm.

Within the current context much is discussed about the importance and quality of teaching with the advancement of new information and communication technologies (ICTs). Considering higher instruction, this advance determines an increasing demand for continuing education, both in the modality of face-to-face and Distance Education (EAD, in Portuguese), but the inclusion of ICTs in curricula has been a way to stimulate, enhance and improve their use, and, in turn, provide an innovative teaching process¹.

In the health field, it still seems challenging, but necessary, as it is imperative to have a closer look at the speed of technological innovations which drive social transformations; therefore, it is revealed a greater need for reflection on the part of educators and that these reflections permeate in the new way of teaching: educating with a humanistic approach in contrast to a rationalist and objective aspect still present today.

Thus, it is argued that at this conjecture, more than the immersion of technologies in teaching, it is to reflect on the pedagogical approach that the teacher prints and not just the technology itself. It must be understood that technology is not a self-sufficient tool; its pure and simple application will not solve all the problems inherent to teaching^{2,3}.

New parameters for teaching/learning are emerging, transforming the way of building knowledge, as well as the instruction methodology and the role of the teacher and his relationship with students⁴. In this context of health education in nursing field, the use of new teaching methodologies has enabled the understanding of different scenarios through technologies that reproduce educational experiences promoted through virtual environments^{5,6}.

Thus, in nursing, it is already evident the use of various technologies incorporated into existing teaching methodologies, implemented by teachers at different times, both by operating equipment and software in laboratories, and by differentiated teaching techniques⁷, but only being complementary tools and not as the only method used.

With the need to incorporate remote technologies at this time of the COVID-19 pandemic, not only nursing courses, but other health courses, started to include new tools in their disciplines, considering the moment and the need for continuity of classes. However, despite having courses in Brazil with hybrid characteristics (use of technologies in teaching and traditional methods), the inclusion of virtual tools in teaching still seems challenging.

In an emergency caused by the pandemic of COVID-19, the managers of colleges and universities around the world had to reinvent new ways of providing education while preserving its quality. Particularly in Brazil, with the new ordinances of the Ministry of Education and Health allowing to all courses to make use of remote methodologies for the continuity of the academic year, a new challenge arises: to provide the users with the feeling of immersion, of finding themselves within the environment, from the navigation and interaction in this virtual environment. At the same time that the educator, respecting the educational principles and the pedagogical approach that he believes, does not transform this moment into a simple distance learning.

Thus, this study aims to describe the state of the art on nursing education and the challenges of using remote technologies in time of COVID-19 pandemic.

METHODS

This is a reflective paper on the effects of the pandemic caused by the corona virus COVID-19 in the education field, specifically in nursing, at the undergraduate level. This study is based on secondary sources of literature relevant to the theme, considering articles from national and international journals and recent productions on COVID-19, public health, health education and remote technologies.

RESULTS AND DISCUSSION

In early December 2019, a new corona virus appeared in the city of Wuhan, Hubei, China; the 2019 corona virus (COVID-19) caused by SARS-CoV-2 (corona virus 2). Since then, local and national governments have been adopting measures, in the social and economic fields, in response to the outbreak of the disease^{8,9}.

Non-pharmaceutical physical interventions, such as social distancing, prolonged school closings and closure of workplace premises, were among others measures to reduce the impact of the COVID-19 outbreak, initially adopted in Wuhan¹⁰, but governments around the world endorsed them. These measures have greatly influenced the life of the population, causing changes in the countries' economies as well as in social aspects of everyone's daily life.

Measures like these are necessary and are strengthened by evidence such as the one presented in the study on the effect of control strategies to reduce social mix on the results of the COVID-19 epidemic in Wuhan, China, indicating that non-pharmaceutical interventions based on sustained physical distance have a strong potential to reduce the magnitude of the COVID-19 epidemic peak and lead to fewer general cases. The reduction and flattening of the epidemic peak is particularly important, as this reduces acute pressure on the health system. Thus, the premature and sudden lifting of interventions can lead to an anterior secondary peak, which can be flattened by relaxing interventions gradually¹¹.

In this context, the closing of schools stands out as one of the most impactful but necessary interventions to reduce the epidemic peak; measure that has been promoting a reformulation of teaching practices and, consequently, in the restructuring of institutions so that, in this way, they meet the new rules of an exceptional nature.

In the health area, this movement around higher education schools emerges as a paradigm shift, especially for those who did not use methodologies with remote technologies in their curricula. In courses such as nursing, although the Ministry of Education Ordinances No. 2,253 / 2001, No. 4,059 / 2004 and No. 1,134 / 2016 formalize the possibility of offering distance learning courses in 20% of full hour load of courses of higher education institutions in Brazil¹²⁻¹⁴, many do not implement them because they believe in having losses in the teaching-learning process.

However, it is argued that talking about remote technologies is beyond the use of technology itself, but how to use and make this instrument a mediating tool in the teaching-learning process, not necessarily used as a distance learning method, but to complement other

pedagogical methods.

Thus, with the pandemic and the need to continue the classes, but through remote technologies, which implies online classes, the moment arises to rethink pedagogical and academic strategies so that it can adapt to the use of new teaching approaches and, in turn, reevaluate traditional practices and develop new skills and forms of teaching, preserving the principles of education, its guidelines and laws, however, involving those who have not yet used ICTs.

In this context, the World Declaration on Higher Education, since 1998, has discussed information and communication technologies in higher education, considering the ability to generate changes in the methods of teaching and learning¹⁵. This discussion has been going on all over the world; the insertion of technological information and communication tools in higher education, currently, has been the subject of reflection on its importance and the quality of teaching, pointing to the advancement of ICTs in the context of higher education systems¹.

However, it is important to highlight that the use of technologies that can be applied both in the face-to-face and Distance Education modality, determines an increasing demand for continuing education, in the transformation of the conception about teacher-student interaction; in the adequate preparation of teachers, in addition to structural changes in educational institutions, both in the organizational domain and in the field of teaching and research. It is believed that the inclusion of ICTs in the curricula is a form to stimulate, enhance and improve their use and open up new teaching methods³.

With regard to health training, specifically, of the nursing professional, it is known that over time, the discussion about the best path for training, considering the tripod comprised by teaching, research and extension, accompanies the historical and social changes, mainly by the representativeness of the profession in the health history of Brazil and worldwide. As a milestone for consolidation and as another step forward in nursing education, in 2001, the National Curriculum Guidelines for the Undergraduate Nursing Course were established, dealing with the pedagogical principles established, integrating the pedagogy of competences, learning to learn, the general instruction, humanistic, critical and reflective, and education centered on the student and the teacher as a facilitator¹⁶.

Thus, through the development of skills, health training in the field of nursing seeks to provide a professional who acts in a multidisciplinary sphere, according to the needs of the National Health System (SUS- Sistema Unico de Saúde). To this end, this learning must transcend that teaching that aims at a mere pedagogical and didactic scientific update and promote the creation of spaces for participation, reflection and dialogo, thus developing the stimulus to clinical reasoning, the valorization of the articulation between theory and practice, the use of active teaching / learning methodologies and curriculum flexibility; active and differentiated teaching is advocated, elucidating new roles for the teacher and the student¹⁵.

From this curricular restructuring mediated by

discussions of the Curriculum Guidelines, Laws and Ordinances of the Ministry of Education, it has long been perceived the need to broaden the teacher's perspective for a learning that incorporate technological tools that, although they translate into advances and challenges for nursing education, in this context, the broad view of innovations and technologies is consolidated^{17,18}.

And suddenly, with the pandemic COVID-19 this discussion returns to be focus on higher education institutions in the health sector, because of the need of social isolation, schools stopped working on the classroom mode and starts to think in new strategies for its continuity.

In the meantime, innovation in teaching became the center of attention and with the constant technological evolution, decisions began to be guided by the use of remote technologies, according to Ordinance 343/2020, of the Brazilian Ministry of Education, published on March 18, 2020, which, exceptionally, instituted the execution of non-face-to-face classes mediated by these technologies, including courses of health sciences, as well as medicine¹⁹.

Then the managers of colleges and universities started to reorganize their classes and think about cautious strategies, mainly, so as not to transform health education into a distance format. Such strategies that range from the structural organization of the school to teacher and student training, aiming above all to preserve the quality of education.

Therefore, how to think of the use of remote technologies suddenly, in face of educational institutions that did not include in their curricula methods with the use of virtual tools and, even in their organizational structure, did not have platforms for this purpose? How to think about providing education with these tools within an instruction that has disciplines which work with motor skills and complex technical knowledge? How to break with this traditional pedagogical scenario and incorporate a pedagogical approach that guides the teacher to incorporate technologies in educational environments?

There, we have the effect of the COVID-19 pandemic on education and its impact on health teaching, an effect that, as from Ordinance 343/2020, institutions had to enter virtual reality, get in the world where ICTs promote a innovative instruction environment capable of modifying a traditional pedagogical scenario.

In this context, the nurse educator, will have two major responsibilities: to create an atmosphere for learning that offers encouraging experiences for each individual to reach their full potential, for it he must accept the diversity of styles and the incorporation of technological tools in the process of work, then from a critical analysis of the fundamentals of educational approaches, understand other routes of access, since a nursing curriculum based on only one approach can restrict students' educational development²⁰.

Thus, considering the current moment of the pandemic and the race against time to resume classes of a non-face-to-face nature, managers and teachers started to dialogue and study the different strategies using remote technologies in health education, even not having visualized the benefits of these tools before.

I started to corroborate with the idea that the use of new remote technologies can enable motivating, reflective, multisensory, dynamic, flexible teaching in terms of time and geographical spaces, collaborative and still promoter the socialization of knowledge. Barbosa and Viana¹⁵ already pointed out these results when analyzing the use of these tools in nursing education, which on the other hand they also revealed that the use of technologies for teaching must integrate a broader pedagogical process, resulting from theoretical reflections and dialogical competences of the nurse as an educator.

However, even if in the short term and due to the needs to address the issues related to the pandemic caused by COVID-19, the institutions, represented by their managers, needed to promote ways to effectively implement Ordinance 343/20. However, it is worth reflecting that this is not only a matter of adhering to the rules to manage content and end the academic period, but that even in the face of this chaos caused by the pandemic, the quality of teaching should be preserved.

Within this frame of reference, it is important to understand that although in this current context, technologies are being used essentially to implement non-presential classes, its importance in the educational context is perceived, but that the use of remote methodology is a complement to face to face teaching practices, including it as a tool that will broaden the view of the student and teacher, contributing to a new way of producing knowledge, through the mastering of different forms of teaching, promoting the problematization and technological professional training in health²¹.

It is also necessary to understand that the students also suffered an impact with this insertion, mainly due to the concern that they used to be part of a course face-to-face. For them, in addition to access difficulties, possibly remedied by the institutions, due to cultural reasons, they see this remote modality as a weakness for the teaching-learning process.

Thus, according to Markham²², the development of didactic methodologies that use the new ICTs to aid in the teaching process, it requires managers to know the profile of access to these resources by the target population, as well as understanding of variables implicit in the use of the Internet, as a mean of communication and selection of information for students and continuing education, revealing limitations and addressing the social inequalities that are sometimes present, in public or private institutions.

For these reasons when the Ministry of Education, proposed these strategies for educational institutions, once the managers evaluated the students' profile, many of them chose to suspend classes, as they would not be able to attend their all students due to access issues, since that the use of these technologies is directly linked to the internet. This reality has mainly affected public educational institutions, which is one of the negative impacts in this moment of pandemic by COVID-19, the total paralysis of classes. Others opted for suspension because they believed that remote methodologies would not meet what was proposed by the institution.

On the other hand, despite studies pointing out

that the introduction of new teaching techniques, using technologies in specific nursing contents, allows moments of reflection and problematization, ensuring learning for the school group²³; at this time of the pandemic by COVID-19, due to the fact that exceptions were made in the education with the insertion of these technologies in health courses, caution is necessary, because despite the benefits of using new remote technologies in teaching, the impact on the teaching-learning process must be considered.

To this end, the school must provide instruments that enable students to develop skills throughout their training and life, which are of a conceptual, procedural and attitudinal nature²⁴.

In this context, it is necessary to understand that in addition to this focus that the nursing graduation has to develop technical skills based on the retention of information, especially of a technical and procedural nature, to promote the formation of this autonomous, critical and reflective professional, capable of providing a humanized and health-promoting assistance²⁵ it is also necessary to develop content of an attitudinal nature, which are competencies that undergo corrections during the student-teacher interaction, which can be lost and become superficial and fleeting when using these remote technologies. It is believed that learning can be sustained and consolidated when teacher / student and student / teacher relationships occur effectively throughout the training process; so teaches the art of caring.

It should also be considered that as nursing skills that are taught to students, the strengthening of interpersonal relationships, bonding and welcoming are highlighted, skills that are related to the process of humanization in health. So, will it be that when using information and communication technologies as a tool for non-face-to-face classes, it will not strengthen the distance in the practice of the future professional and patient? The practice of teaching, in eye-to-eye contact, touch and experiences exchanged at the learning site is a sine qua non issue for cognitive assimilation; that remote technologies do not allow.

From this perspective, it is worth mentioning that the principles that govern nursing teaching must be fully respected and that it is necessary to think about the use of these technologies as tools that add value to traditional teaching methods, constituting a complement and not the only one way of providing health education. Due to the exceptional circumstance, the use of these tools was chosen for several disciplines, however respecting their peculiarities and within the percentile limit that would

not weaken the student's teaching-learning process and, above all, maintaining the quality level of teaching.

Finally, it is evident that talking about the impact of the corona virus (COVID-19) in the health educational sector specifically in the field of nursing, goes beyond a structural reorganization of courses, as it implies a change attitude of managers, teachers and students to reformulate teaching practices (sometimes using traditional methods), in innovative practices preserving a teaching that provides the student with criticality, reflection, dialogue, bonding and interaction; elements that are part of a training aimed at transformation, empowerment and not just the transmission of knowledge.

It is learned, that the COVID-19 pandemic caused paradigm shifts, perhaps not yet overcome by institutions in the health field, as they perceived themselves within a reality in which they generated changes in the political, economic, cultural and social aspects worldwide, they had to reinvent and insert new ways of teaching in their work process; had to discuss the different educational approaches and, given the needs to readjust health teaching methods, they inserted remote technologies as tools to meet the real need for continuity of classes in a non-face-to-face format.

For many, it is a challenge, as it currently permeates a reflection on the care of distance learning in the field of nursing and other courses in the health area. However, as it opened up to discussions about new ways of teaching mediated by innovation, it can be said that this will be the greatest impact of the pandemic for teaching: the contribution of new information and communication technologies in the teaching-learning process in health field as well as the reflection on distance education and its concepts, differentiating it from the concepts of remote methodology and the use of technologies.

■ CONCLUSION

In nursing education, the discussion related to the use of remote technologies in the classroom has always been a point of debate. However, with the need to include these tools for the continuity of classes in the non-face-to-face model resulting from the social isolation strategy motivated by the pandemic of COVID-19, it can provide an opportunity to have a new look on the subject. Perhaps, with this moment lived, there is an opportunity to expand the debate on the use of these remote methodologies in health education, seeking a reflection on their interaction with other teaching methods already implemented.

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Resumo

Introdução: A pandemia do Corona vírus (COVID-19) provocou em caráter emergencial a necessidade dos gestores das faculdades e universidades de todo mundo de reinventar novas formas de prover o ensino preservando a qualidade dele. Com as novas portarias do Ministério da Educação e Saúde, houve uma abertura para que todos os cursos utilizassem de metodologias remotas para continuidade do ano letivo, surgindo novos desafios e paradigmas com essa proposta metodológica: prover para o usuário, a sensação de imersão, de estar dentro do ambiente, a partir da navegação e interação nesse meio virtual, ao mesmo tempo que o educador, respeitando os princípios educacionais e a abordagem pedagógica que acredita, não transformar esse momento em uma simples educação à distância.

Objetivo: Descrever o estado da arte sobre o ensino de enfermagem e os desafios do uso de tecnologias remotas em época de pandemia do Corona vírus.

Método: Trata-se de estudo reflexivo consubstanciado por fontes secundárias da literatura pertinente à temática, considerando artigos de periódicos nacionais e internacionais e produções recentes sobre educação, formação em saúde, tecnologias remotas, o COVID-19 e saúde pública.

Resultados: Evidencia-se que vivenciar os efeitos da pandemia de corona vírus (COVID-19) no setor educacional na formação em saúde, em especial no campo da enfermagem, vai além de uma reorganização estrutural dos cursos, pois implica em mudança atitudinal dos gestores, docentes e discentes para que reformulem as práticas de ensino (por vezes com ferramentas tradicionais), em práticas inovadoras preservando um ensino que propicie ao estudante a criticidade, reflexão, diálogo, vínculo e interação; elementos que fazem parte de uma formação que visa a transformação, o empoderamento e não apenas a transmissão do conhecimento. Nesse contexto, a pandemia do COVID-19 provocou mudanças de paradigmas talvez ainda não superados pelas instituições na área da saúde, pois ao se perceberem dentro de uma realidade em que gerou mudanças nos aspectos políticos, econômicos, culturais e sociais em nível mundial, estas tiveram que se reinventar e inserir no seu processo de trabalho as novas formas de ensinar; tiveram que discutir sobre as diferentes abordagens educacionais e diante das necessidades do readequar os métodos de ensino em saúde, inseriram as tecnologias remotas como ferramentas essenciais para atender a real necessidade da continuidade das aulas no formato não presencial. Para muitos um desafio, pois permeia atualmente uma reflexão sobre o cuidado do ensino à distância no campo da enfermagem e demais cursos da área da saúde. Entretanto, à medida que se abriu para discussões sobre novas formas de ensinar mediadas pela inovação, pode-se dizer que esse será o maior impacto da pandemia para o ensino: a contribuição das novas tecnologias de informação e comunicação no processo ensino aprendizagem para formação em saúde, assim como a reflexão sobre a educação à distância e seus conceitos, diferenciando-a dos conceitos de metodologia remota e o uso das tecnologias.

Conclusão: No ensino da enfermagem, a discussão relacionada ao uso de tecnologias remotas em sala de aula sempre foi um ponto de debate. Entretanto, com a necessidade da inclusão dessas ferramentas para a continuidade de aulas no formato não presencial decorrente da estratégia do isolamento social motivada pela pandemia do COVID-19, pode oportunizar a se ter um novo olhar sobre o assunto e que talvez com esse momento vivido se haja oportunidade de ampliar o debate sobre uso dessas metodologias remotas no ensino em saúde, buscando uma reflexão sobre a interação destas com os demais métodos de ensino já implementados.

Palavras-chave: COVID-19, mudanças, educação, formação em saúde, enfermagem, tecnologias, inovações.

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