



# Remote work of nurse-professors in pandemic times<sup>a</sup>

*O trabalho remoto de enfermeiros docentes em tempos de pandemia*

*Trabajo remoto de enfermeros docentes en tiempos de pandemia*

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## ABSTRACT

**Objective:** from the perspective of nurse-professors, to analyze the effects of remote teaching because of the COVID-19 pandemic on their lives. **Method:** a descriptive and qualitative study, conducted in October 2020 at a University Center in Teresina-PI. The research participants were 13 nurse-professors. Data collection took place by means of individual interviews, guided by a semi-structured script. Subsequently, content thematic analysis was performed. **Results:** the participants reported that remote teaching generated changes in the routine, with the need to adapt the class to the virtual environment and to implement home rearrangements. These aspects were maximized by lack of mastery in terms of the digital tools, which increased the work demands. Sometimes they felt anguished, sad, guilty, and alone due to the obstacles to establish good relationships with the students. Work overload contributed to physical and emotional illness in the nurse-professors, who reported stress, tiredness, difficulty sleeping, blood circulation and eating problems, and visual impairment. **Final considerations and implications for the practice:** remote teaching has generated high demands, which exacerbate risk situations for the participants' illness; therefore, strategies must be thought out focusing on the re-signification of the teaching work, a theme that is still incipient in research studies.

**Keywords:** Faculty, Nursing; Education, Nursing; Coronavirus Infections; Occupational Health; Educational Technology.

## RESUMO

**Objetivo:** analisar, na percepção de enfermeiros docentes, os efeitos do ensino remoto decorrente da pandemia de Covid-19 na sua vida. **Método:** estudo descritivo e qualitativo, realizado em um Centro Universitário de Teresina-PI, em outubro de 2020. Participaram da pesquisa 13 enfermeiros docentes. A coleta de dados ocorreu mediante entrevistas individuais, guiadas por um roteiro semiestruturado. Posteriormente, procedeu-se à análise temática de conteúdo. **Resultados:** os participantes relataram que o ensino remoto gerou mudanças na rotina, com a necessidade de adequação das aulas para o ambiente virtual e rearranjos domésticos. Esses aspectos foram maximizados pela falta de domínio sobre as ferramentas digitais, o que aumentou as demandas de trabalho. Algumas vezes eles sentiram-se angustiados, tristes, culpados e sozinhos devido aos entraves para estabelecer relações com os alunos. A sobrecarga laboral contribuiu para o adoecimento físico e emocional dos enfermeiros docentes, que referiram estresse, cansaço, dificuldades para dormir, problemas de circulação sanguínea e de alimentação e danos visuais. **Considerações finais e implicações para a prática:** o ensino remoto tem produzido demandas elevadas, que exacerbam situações de risco para adoecimento dos participantes; portanto, estratégias devem ser pensadas com foco na ressignificação do trabalho docente, uma temática ainda incipiente nas investigações.

**Palavras-chave:** Docentes de Enfermagem; Educação em Enfermagem; Infecções por Coronavírus; Saúde do Trabalhador; Tecnologia Educacional.

## RESUMEN

**Objetivo:** según la percepción de enfermeros docentes, analizar los efectos de la enseñanza remota como consecuencia de la pandemia de Covid-19 en sus vidas. **Método:** estudio descriptivo y cualitativo realizado en un Centro Universitario de Teresina-PI en octubre de 2020. Los participantes fueron 13 enfermeros docentes. La recolección de datos tuvo lugar por medio de entrevistas individuales, guiadas por un guion semiestructurado. Posteriormente, se procedió a realizar el análisis temático de contenido. **Resultados:** los participantes manifestaron que la enseñanza remota generó cambios en la rutina, con la consecuente necesidad de adaptar las clases al entorno virtual y de implementar modificaciones domésticas. Estos aspectos se vieron maximizados por la falta de dominio de las herramientas digitales, lo que aumentó la cantidad de demandas laborales. En ocasiones se sintieron angustiados, tristes, con culpa y solos debido a los inconvenientes para establecer vínculos con los alumnos. La sobrecarga laboral contribuyó al malestar físico y emocional de los enfermeros docentes, que manifestaron estrés, cansancio, dificultades para dormir, problemas de circulación sanguínea y de alimentación y daños en la vista. **Consideraciones finales e implicancias para la práctica:** la enseñanza remota ha generado grandes demandas, que intensifican situaciones de riesgo para el malestar de los participantes; por lo tanto, deben pensarse estrategias enfocadas en la resignificación del trabajo docente, una temática que todavía es incipiente en los estudios de investigación.

**Palabras clave:** Docentes de Enfermería; Educación en Enfermería; Infecciones por Coronavirus; Salud Laboral; Tecnología Educacional.

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## INTRODUCTION

Severe acute respiratory syndrome Coronavirus 2 (Sars-CoV-2), the agent causing Coronavirus Disease 2019 (COVID-19), was identified at the end of 2019 in the city of Wuhan, China. The significant flow of people between countries/territories, resulting from the globalization process and associated with the rapid dissemination and high transmissibility of the virus, led in January 2020 the World Health Organization (WHO) to declare the disease a public health emergency of international concern. By March of the same year, the virus had already been detected in 215 countries/territories, with high mortality rates worldwide and difficulties for the health services to meet the demand, raising the disease to the status of a pandemic<sup>1</sup>.

Limited information was available about the virus and its manifestation forms; however, airborne transmission was later reported. When exhaling, infected people release small respiratory droplets with the virus, which can be inhaled immediately, if at less than one meter. Even after the infected person has left the environment, the particles are still dispersed in the air for hours, and people more than two meters away from the original source may inhale enough virus to cause infection<sup>2</sup>. This means that there is the possibility of COVID-19 transmission over long distances, including through contact with contaminated surfaces and objects<sup>2,3</sup>.

In the first months of the pandemic, nonexistence of specific vaccines and medications for the treatment of COVID-19 led the states to recommend the adoption of non-pharmacological measures aimed at mitigating virus transmission, such as mandatory use of protective masks, hand hygiene, and social distancing. Such measures are still recommended to the present day, even with the advent of vaccination worldwide. To ensure social distancing between people, mass events were canceled, borders were closed, work shifted to the home office modality, transport circulation was restricted, quarantine was implemented for risk groups, and educational institutions were closed<sup>4</sup>. In the cities of São Paulo and Rio de Janeiro, it was observed that, after implementing these measures, the virus reproduction rate was below 1 but, due to relaxation, the values increased, ranging between 1 and 1.3<sup>5</sup>.

Social distancing measures can reduce social interactions by 60%-70% when compared to the pre-pandemic period;<sup>6</sup> and the closing of schools can reduce the virus reproduction rate by 48.9%. Nevertheless, in the absence of any intervention, the expected attack rate is from 28.3% to 34.6%<sup>7</sup>. For Northern Ireland, a study estimated that a strict lockdown with closed schools reduced virus reproduction by 35%, and by 44% for Wales. It was also identified that more rigorous restriction measures are more effective to reduce the number of deaths<sup>8</sup>.

Thus, the substitution of in-person activities in public or private higher education institutions with classes in digital media was authorized by the Brazilian Ministry of Education through Ordinance No. 343 of March 17<sup>th</sup>, 2020<sup>9</sup>, as well as the practical activities in laboratories or internships, not included among those eligible for substitution, according to Ordinance No. 45 of March

19<sup>th</sup>, 2020<sup>10</sup>. However, Ordinance No. 544 of June 16<sup>th</sup>, 2020, which revoked the previous ones, authorized, on an exceptional basis, that these activities, regardless of the type, could take place with the aid of Information and Communication Technologies (ICTs), provided that each course respected its Curriculum Guidelines (*Diretrizes Curriculares Nacionais*, DCNs)<sup>11</sup>.

It is worth noting that the remote teaching modality in Nursing, adopted during the COVID-19 pandemic, must be a temporary situation. Remote teaching provides synchronous and asynchronous classes, respectively, in real time and recorded with materials made available for the group of students. It differs from traditional Distance Education (DE) since, in this modality, the activities take place predominantly asynchronously, with tutors for monitoring<sup>12</sup>, unlike remote learning, which requires professors to be constantly present in the virtual classrooms, in synchronous activities using digital platforms.

Digital platforms require differentiated planning for the activities to provide active learning, and for them to be effective both for the student and for the professor. Interruption of in-person activities accelerated the adoption of these teaching-learning alternatives, mediated by educational technologies, to allow the students to build and search knowledge, ensuring continuity of the academic year. However, many challenges arose in this process for maintaining and fostering training of qualified professionals.<sup>12</sup>

As a result of the pandemic, the professors needed to adapt their home environment and transform it into workplaces, raising their financial expenses regarding electricity, Internet, maintenance of electronic devices and furniture, among others, without necessarily being compensated by their employers. This restructuring intensified the demands and the precariousness of the working conditions that trigger harms to workers' health<sup>13</sup>.

Thus, the starting point is the assumption that the remote teaching modality, adopted as a result of COVID-19, has exerted an influence on the daily routine of nurse-professors, evidencing work intensification and worsening of the risk situations for illness. From these considerations, the study guiding question was elaborated: What changes occurred in the teaching work, perceived by Nursing professors, because of adopting remote teaching during the COVID-19 pandemic? As well as the following objective: from the perspective of nurse-professors, to analyze the effects of remote teaching because of the COVID-19 pandemic on their lives.

## METHOD

This is a descriptive and qualitative study, conducted in a private University Center located in Teresina-PI. The bachelor's degree course in Nursing at this institution has a total of 4,047.4 hours distributed in 9 academic periods, of which 1,332.4 hours are devoted to practical activities, where 800 hours are distributed in the last 2 academic periods for the mandatory and supervised internship in hospital environments and in basic health units in the municipality. The institution's faculty consisted of 15 nurse-professors who taught in the undergraduate and graduate courses.

The study participants were the nurse-professors who worked in the three educational segments: teaching, research and/or extension. The following inclusion criteria were adopted: being a professor with training in Nursing and at least two years of proven performance in the public and/private sector. Those who were on work leave for any reason at the time of data collection were excluded. A convenience sampling process was used, in which everyone was invited to participate in the research and, after two attempts to obtain acceptance, 2 of the potential participants who did not answer the invitation were excluded, totaling 13 participants.

Data collection took place in October 2020, by means of individual interviews in the *Zoom Meetings®* platform, mediated by three authors of the study. The day before the interview, the participants received information, through messages on the chat application, about the use of the platform to be employed in the interviews, scheduling of the most appropriate time, and guidelines on the study ethical issues, also signing the Free and Informed Consent Form. The interviews lasted approximately 30 minutes, and were sufficient in number to reach theoretical saturation, verified by recurrence and repetition of the themes. The contents of the interviews were audio- and video-recorded on the digital platform itself.

A semi-structured script with questions for the participants' sociodemographic characterization and the following interview questions were used: Describe your everyday routine to develop the teaching activities; How do you perceive the impacts on your life with remote teaching?; and What strategies have you adopted to work from your home during the pandemic?

The data were analyzed according to the thematic content analysis technique, and the following phases were carried out: pre-analysis, exploration of the material, and data treatment and inference of the results<sup>14</sup>. Thus, after being transcribed, the interviews were submitted to floating reading, for the researchers' approximation to the contents verbalized by the nurse-professors. Subsequently, after repeated meticulous readings, the nuclei of meaning corresponding to each question per participant were coded to identify the recurring themes in the statements. This categorization process oversaw the three interviewers, in an isolated manner, and validated – *a posteriori* – by the other authors.

Clarity of the methodological procedures, elaboration of the textual *corpus*, and in-depth description of the analysis material conferred quality to the research. This process allowed identifying the context units extracted from the participants' statements, which represented the locus of the events experienced during remote teaching. Based on the survey of these experiences, it was possible to summarize the registration units, that is, the themes that were evoked through the speech contexts. The themes that converged in meanings were then allocated to the same thematic category. Finally, inferences were made about the data and the results obtained were discussed with the aid of the available literature on the subject matter.

The ethical precepts for research studies involving human beings were respected; and the research project was approved

by the Research Ethics Committee of the proposing institution (Opinion No. 4,290,780; of December 21<sup>st</sup>, 2020). To ensure anonymity of the interviewees, they were called *Participant*, followed by a number corresponding to the order in which they were included in the research.

## RESULTS

The research participants were 13 nurse-professors, mostly female (n = 12), with a mean age of 46.5 (24 – 57) years old and 22 (2 – 32) years of training. In relation to the teaching activity, a mean of 16.8 (2 – 26) years of experience was obtained. All reported having graduate studies and having received training regarding the use of ICTs during remote teaching resulting from COVID-19.

In this study, the registration units – themes – refer to events experienced by the participants. From these events, it was identified that remote teaching resulting from COVID-19 exerted effects on two broad contexts: personal and work-related. Based on the homogeneity principle – according to which each category must have a single unit of analysis<sup>14</sup> –, it was considered pertinent to categorize the registration units into four empirical categories: 1. Remote work and the “new” way of Nursing teaching: needs and demands; 2. Strategies in performing the teaching work remotely; 3. Remote work: advantages and disadvantages in the nurse-professors' work; and 4. Effects of remote work on the nurse-professors' health.

### Remote work and the “new” way of Nursing teaching: needs and demands

The “new” – remote teaching – is frightening in the participants' perception. The reports highlight the following as main challenges related to remote teaching in this pandemic period, despite already using ICTs in the in-person activities: adequacy of the teaching methodologies for application through digital platforms, and need to keep the student as an active participant in this process, as observed in the following statements:

*We didn't know at all how to transform a theoretical-practical class into a remote class (Participant 3).*

*At the beginning, it was a very big challenge, the new frightened me. I confess that I don't like it. [...] fears of remote teaching, of the technology, of the new (Participant 6).*

*I don't have eye-to-eye contact with the students, as their cameras are turned off. Some students also show disinterest in accessing the classes (Participant 11).*

*I had to [...] redo classes to adapt them to the remote modality, change all the activities (Participant 12).*

To succeed in this process, they mentioned the need for professional qualification to work with the digital platforms and other educational technologies, as well as to adopt active methodologies in a virtual environment, in addition to knowing

the group of students with whom they would work, as evidenced by the following statements:

*To draw the student's attention, we need many tools: using the active methodology, placing the student in the center of this teaching-learning process. We underwent many training sessions, many courses, [and] in the group we receive material, reports for courses, classes and the professors' experiences are shared (Participant 4).*

*Remote teaching requires more mastery of the technology, training, more class planning, searching for materials; and, during all that, we even must conduct the students' afflictions. [...] always making the situational diagnosis of the group of students (Participant 11).*

### **Strategies in performing the teaching work remotely**

To meet the demands of remote work, several adaptations in the home routine were necessary to maintain the personal and academic routine, as evidenced in the following statements:

*I don't let them extend [the activities] on Saturday afternoons and Sundays, because I try to preserve my weekend, my rest time, and the time for socializing with my husband and daughter (Participant 4).*

*We already had an office [at home] intended for work before the pandemic, but sometimes it's confusing; because it's only one room devoted to these activities, and now everyone in the house needs to be connected at the same time. With that, our strategy has been for each of us to stay in a room so as not to disturb the other's activity, and it's yielded good results (Participant 5).*

*[...] I had to totally change my routine (Participant 12).*

### **Remote work: advantages and disadvantages in the nurse-professors' work**

The participants mentioned the need for some changes, arising from the need for social distancing, which they considered positive in the new remote work environment, such as working from their homes, avoiding commutes, following-up their children's growth, and flexibility, as expressed in the following statements:

*[...] the only thing that changed is that I'm not in the classroom. I see it as a very positive thing; first, I don't need to go out of my house, I stay at home (Participant 2).*

*[...] it's good, [because] you're comfortable in your house, don't need to go anywhere (Participant 3).*

*I adapted and perceived that I managed to develop skills during this time, improving my adaptation and flexibility (Participant 4).*

*The positive side is that I'm at home, don't need to go anywhere, and I manage to follow-up my daughter's growth (Participant 6).*

However, the interviewees also experienced negative effects from remote teaching, namely: work overload, change in the home routine, lack of feedback from the students, and use of the camera for image capture. These aspects were compounded by the fact that they do not have mastery over the digital tools and by adaptation of the classes to the virtual environment, made evident in the following statements:

*I confess that I'm working quite more today than before (Participant 6).*

*My work hour load is huge, it tripled. [...] due to ease of connection, they call me anytime for training, to solve some student's doubt. [...] this availability – of being at home and accessing the system at any moment and at any time – increases our work hour load (Participant 7).*

*[...] I still don't master the tools [...], it's very different for you [interviewees] who were born with the Internet, with computers, with everything. It seems that time is shorter now, it requires much more time from us (Participant 8).*

*This remote work style, where we stay at home sharing with other duties, ends up requiring more activities. Then, if thinking about everything is already an impact burden, of greater demand. [...] in the end, it's in the mixture: work environment, home and family environment, all together (Participant 10).*

### **Effects of remote work on the nurse-professors' health**

The changes in the participants' personal and work routines during the COVID-19 pandemic triggered emotional changes, such as sadness, anguish, fear, loneliness, guilt, and stress, arising from an exhausting and repetitive work process. The following statements illustrate these situations:

*It's all been very tiring, stressful, and repetitive. It's the three adjectives that I choose, mainly stressful and tiring; a lot more than in-person, remote is worse, mainly mentally (Participant 1).*

*From the emotional point of view, I'm more stressed, and this brings anguish, this brings several emotional conflicts (Participant 7).*

*It was hard at the beginning, because everything was new to me, and I was afraid of not been able to do it, I was nervous (Participant 9).*

*I feel lack of in-person contact because it seems that we don't have bonds [...]; sometimes I even feel alone in the virtual classrooms [...]. They [the students] miss the classes*

*and that makes me sad, with a feeling of incompetence and guilt (Participant 11).*

Allied to the emotional changes, physical wear out was considered as significant in the face of the remote teaching experiences during the COVID-19 pandemic. The participants mentioned tiredness, difficulties sleeping, bloodstream and eating problems, and visual impairment. The statements related these impairments to work overload and to the luminosity of the necessary electronic devices for the remote activities:

*It's been very tiring. I was physically tired due to the task overload that I'm receiving remotely (Participant 1).*

*It's more tiring [than in-person work]. Although [...] it's remote work – you're at home and don't need to go out –, it's exhausting. The light behind the computer bothers me, it makes me experience visual fatigue (Participant 4).*

*I'm suffering physical impacts: bloodstream and column problems, interference in sleep, eating and appetite loss (Participant 7).*

*Remote teaching was a big challenge, it had huge impacts, even on my sleep (Participant 8).*

## DISCUSSION

The social distancing conditions caused by COVID-19 imposed on the professors the need to search for other forms of pedagogical organization to maintain the students' academic routine<sup>15</sup>. This research revealed that the nurse-professors' experience in the remote teaching regime is ambivalent, sometimes arousing positive feelings, but others potentiating physical and emotional wear out.

Faced with the crisis on the world stage, brought about by coronavirus infections, the educational institutions underwent rapid changes in their way of teaching, both at the undergraduate and graduate levels. A study<sup>16</sup> conducted with Singaporean university students suggests that converting classes to the virtual environment reduces the potential for disease transmission, mitigating the harms from interrupting the university activities. Therefore, it is believed that the adoption of remote teaching at the research institution of this study was a viable strategy to provide educational continuity during the periods of high Sars-CoV-2 reproduction.

Thinking about remote teaching during pandemic situations comes with concerns for assertive decision-making, based on the life conditions of professors and students. A study<sup>17</sup> proposed some guidelines that managers must consider in this adaptation process to remote teaching, namely: the possibility of accessing the digital platforms; the skills to handle the ICTs; time availability to attend classes and independent study; the expectations related to remote teaching; and the planning of activities and ways to evaluate learning.

Devising other classroom spaces/times – more specifically virtual classrooms – enhanced some forms of technology-mediated communication that not only bring about limitations and challenges, but also provide learning<sup>18</sup>. Remote teaching, adopted as a measure to allow continuity of the nurses' training process, is requiring nurse-professors to resort to the digital media, once used in a complementary manner, but which have now become the main tool for the pedagogical practices.

Despite having resources such as computers and devices with Internet access, many nurse-professors lacked ICTs skills or familiarity and were "forced" to adapt quickly, which requires great dedication and effort. The professors' efforts during remote teaching have been applied to the elaboration and availability of the content, in addition to adaptation to the digital media. Thus, it is believed that the concern with the ways of learning may be left to a second place, even due to the difficulties caused by physical distancing<sup>19</sup>.

In addition to that, connection problems and student participation in remote classes are added to the difficulties encountered by the professors in their adaptation to the new technological resources, such as recording video-lessons, teaching online classes, and using active methodologies and ICTs<sup>20</sup>. In the case of the participants of this study, aiming to help them deal with stress and anxiety in the performance of a role for which they were not prepared, they received training from the institution in favor of teaching continuity via digital platforms.

During a remote activity, the professors need to be attentive to the students' effective participation, verify connectivity problems and adapt the class proposal to the resources available in the platform used by the institution, added to the already existing demands of the teaching work, which include evaluation of learning, leadership of research groups, academic work guidelines and coordination of extension projects, among others.

In this sense, it is understood that the difficulties of a significant number of participants, cited in this research, are related to overload of activities, to the extent that, demonstrably, remote teaching work requires much more time and involvement and adaptation of the new routine, in addition to the dialogic of professional activity and family daily life<sup>13,21</sup>. Thus, classes taught in the virtual environment tend to be more tiring and less productive than in-person classes, in view of all the aforementioned factors, to which the home demands are added<sup>13</sup>.

Adapting to the new home office teaching modality, integrating home activities, handling of the ICTs, teaching plan adjustments, and activity recordings are some adversities experienced by the professors during remote teaching, which can trigger professional burnout syndrome, stress, anxiety, and depression<sup>22</sup>.

However, some reports highlight positive effects of remote teaching resulting from the COVID-19 pandemic. This teaching modality enhanced the professors' professional development, providing opportunities to acquire competences for new ways of doing their work and integration of the ICTs in the pedagogical process<sup>23</sup>. The remote teaching special regime revealed the importance of developing new ways of relating to the students,

collaboration with colleagues and pedagogical coordination, as well as transfer of experiences from other professional fields to higher education.

In balance, among the advantages and disadvantages of this way of working, its negative effects on quality of life stand out, mainly for women – most of the interviewees in this study –, such as emotional stress, work and social demands, and difficulties in fulfilling multiple tasks<sup>13,23</sup>.

Nurse-professors must be seen as multipurpose professionals, with various and high-complexity activities, inserted into the educational and care context. Their work requires continuous production, which sometimes has repercussions on the relationships between peers. It is also a work activity that involves an intense pace and requires excessive working hours, even when “outside” the work environment, which would be time devoted to self-care. Thus, they corroborate the findings of another study, in which aspects inherent to work organization and interpersonal relationship difficulties stand out as challenges for humanization of the nurse-professors’ work<sup>24</sup>.

In addition to that, since the school semester takes place remotely, it has been essential to invest in training the professionals regarding the use of digital platforms, with which most of them had no affinity. In this sense, the study emphasizes that the participants are aware about the use of ICTs in teaching, although in an incipient manner and without exploring their full potential. However, the new setting led them to resort to new learning and technology uses in the teaching process<sup>25</sup>.

In this teaching-learning process, the professional can be affected by this problem regarding the difficulties encountered by nurse-professors when faced with the use of ICTs, often unknown. The professors’ frustration comes from the fact that they do not master all the technological nuances to carry out their work, as well as that they do not fully master this tool, leading to an increase in demand<sup>26</sup>.

A study<sup>27</sup> conducted with higher education professors in the municipality of Rio de Janeiro identified a 40% increase in the hours needed to prepare materials for the academic activities during remote teaching. It is observed that the elaboration of active teaching-learning strategies demands significant changes in the teaching practice, through the commitment of physical, mental, and emotional energy, thus increasing workload in the preparation of classes<sup>21</sup>.

Remote teaching brought the problem of university teachers’ work overload to the center of the stage. These are continuous activities that go beyond the contractual working hours, without rest breaks, and requiring any-time availability to meet the institution’s and the students’ demands. This situation was compounded by the pandemic, given the need to learn how to use the ICTs, in addition to the affective-emotional support to the students, who were weakened and full of uncertainties about their future<sup>28</sup>. For example, in addition to training themselves to work with digital platforms, the participants needed to worry about whether all their students would be able to participate in the activity, either due to problems connecting to the Internet or to financial barriers.

Therefore, it is perceived that remote teaching has reverberated in challenges for the group of nurse-professors, among which are the adaptation and flexibility related to the new way of teaching and the use of technological tools, which generates feelings of insecurity and doubts<sup>29</sup>.

Thinking about the context of work relationships, university teachers are still subjected to the seasonal work system, especially in private institutions, where turnover is high and the physical, cognitive and mental pressures to meet goals potentiate health strain<sup>30</sup>. In this sense, a study<sup>31</sup> conducted with university teachers in China identified conditions of mild depressive disorder, bipolar affective disorder, generalized anxiety, adaptation disorder and burnout, all triggered or aggravated by the COVID-19 pandemic.

Consequently, it becomes important to ensure better working conditions for university teachers to conduct remote teaching. A study<sup>32</sup> carried out with nurse-professors from a rural institution in the United States noticed that those professors who were better able to cope with the challenges and changes resulting from the pandemic presented better quality of life.

Additionally, the participants of this study revealed feeling alone, afraid, sad, anguished and stressed, with these effects being attributed to work overload and demotivation to teach in the virtual environment, data corroborated by other research studies<sup>31,33</sup>.

In this same direction, remote teaching consolidates the logic of banking teaching, in the current context characterized as “digital monologues”. Relationships between professor and student during virtual classes are nonexistent, without sharing and expression of feelings and emotions, with absence of any kind of exchange of knowledge and practices<sup>33</sup>. This was evidenced by a frequent scenario: professors with camera and audio activated during the classes, looking at “empty” computer screens, without even visual contact with the students.

The fact that they are in social isolation can also trigger or potentiate acute problems such as anguish, irritability, insomnia, mood changes, depressive symptoms, fear, anxiety, anger and stress, related to restrictions in the routine, financial difficulties and problems establishing communication with other people<sup>34</sup>. In fact, it is to be thought that these workers are not exempt from the harmful effects of the COVID-19 pandemic in which the general population is immersed.

A study<sup>35</sup> conducted with Brazilian individuals over 18 years old showed that socially isolated people felt more fear of contracting the Sars-CoV-2 infection and of going out of their homes. Thus, experiencing social distancing, these professors require emotional balance and good practices to also maintain good levels of physical, mental, and financial health, as well as the rest of society.

University teachers recognize the need for self-care, but work demands more time than they intended, causing impacts on their quality of life and habits<sup>36</sup>. Such fact has been maximized by the pandemic, considering that the professors have felt certain loss of their private lives. These situations contribute to increased complaints of physical and mental symptoms such

as stress, insomnia, exhaustion, body aches, vocal problems, and emotional harms, which were common among university teachers before the pandemic<sup>22,37</sup>.

In the pandemic scenario and facing the challenges related to social distancing, aiming at the continuity of academic activities in university institutions, it becomes necessary to reflect on the possible paths to higher education in the face of the new work reality of university teachers, in addition to seeking paths for the reconstruction of the professional identity<sup>38</sup>.

However, it is worth noting that, in Nursing education, the use of various ICTs incorporated into in-person activities is already evidenced, although in a complementary manner<sup>20</sup>. Nevertheless, the new demands arising from the pandemic scenario, at the same time that they can cause re-signification of the teaching practice with the acquisition of new competences to be inserted in a future in-person context, have also generated negative impacts, whether financial – arising from longer workdays without wage compensation – or in terms of health – due to the incompatibility of social and work life, work overload, and lack of skills to deal with the ICTs – causing frustration<sup>33</sup>.

## FINAL CONSIDERATIONS AND IMPLICATIONS FOR THE PRACTICE

The participants of this research characterized the effects of remote teaching on personal and work life, as well as for their physical and mental health, as challenges to be faced. Challenges that are related to adapting content and pedagogical practices to remote teaching, to the work routine, and to the family daily activities. They also highlighted acquisition of new professional skills, with greater integration of the digital technologies in the teaching-learning process, which can significantly contribute to Nursing education.

However, the nurse-professors mentioned that they sometimes felt sad, alone and anguished at the absence of a closer relationship with their students and work colleagues. In addition to that, they highlighted that remote teaching has imposed risks of illness associated with work overload, repetitive work, and physical aspects inherent to the digital platforms, such as screen brightness, leading to harms to their physical and emotional health.

This study presents the following limitations: the fact that the interview script was not submitted to a pilot test, justified by the reduced number of nurse-professors in the researched institution; as well as the fact that the interviews were not returned to the participants, considering their exhaustion, as they were in an adaptation period to the use of the digital technologies. In addition, submitting the research instrument to experts in the subject matter could confer greater methodological quality to the study, being recommended for future research studies.

It is hoped that this research will contribute to discussions about the health of nurse-professors, a theme still incipient in the research studies from the perspective of the COVID-19 pandemic context, since it was observed that the problems arising from remote teaching – in fact – are long-time conditions, intensified by the contemporary

moment of adaptation to the new teaching modalities, and which are characterized as obstacles to humanization in the teaching work.

Thus, it is hoped that strategies to mitigate the risks of illness in these professionals – particularly during unexpected events such as COVID-19 – can be developed considering the demands of the teaching work revealed in this study and in similar surveys.

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## REFERENCES

1. World Health Organization. Coronavirus disease (COVID-19). Situation Report – 142 [Internet]. 2020 [citado 2021 abr 29]. Disponível em: <https://apps.who.int/iris/handle/10665/332391?show=full>
2. Morawska L, Milton DK. It is time to address airborne transmission of coronavirus disease 2019 (COVID-19). *Clin Infect Dis*. 2020;71(9):2311-3. <http://dx.doi.org/10.1093/cid/ciaa939>. PMID:32628269.

3. Chen W, Zhang N, Wei JJ, Yen HL, Li Y. Short-range airborne route dominates exposure of respiratory infection during close contact. *Build Environ*. 2020;176:106859. <http://dx.doi.org/10.1016/j.buildenv.2020.106859>.
4. Silva LLS, Lima AFR, Polli DA, Razia PFS, Pavão LFA, Cavalcanti MAFH et al. Medidas de distanciamento social para o enfrentamento da COVID-19 no Brasil: caracterização e análise epidemiológica por estado. *Cad Saude Publica*. 2020;36(9):e00185020. <http://dx.doi.org/10.1590/0102-311x00185020>. PMID:32965378.
5. Candido DS, Claro IM, de Jesus JG, Souza WM, Moreira FRR, Dellicour S et al. Evolution and epidemic spread of SARS-CoV-2 in Brazil. *Science*. 2020 set 04;369(6508):1255-60. <http://dx.doi.org/10.1126/science.abd2161>. PMID:32703910.
6. Quaife M, van Zandvoort K, Gimma A, Shah K, McCreesh N, Prem K et al. The impact of COVID-19 control measures on social contacts and transmission in Kenyan informal settlements. *BMC Med*. 2020;18(1):316. <http://dx.doi.org/10.1186/s12916-020-01779-4>. PMID:33012285.
7. Trentini F, Guzzetta G, Galli M, Zardini A, Manenti F, Putoto G et al. Modeling the interplay between demography, social contact patterns, and SARS-CoV-2 transmission in the South West Shewa Zone of Oromia Region, Ethiopia. *BMC Med*. 2021;19(1):89. <http://dx.doi.org/10.1186/s12916-021-01967-w>. PMID:33832497.
8. Davies NG, Barnard RC, Jarvis CI, Russell TW, Semple MG, Jit M et al. Association of tiered restrictions and a second lockdown with COVID-19 deaths and hospital admissions in England: a modelling study. *Lancet Infect Dis*. 2021;21(4):482-92. [http://dx.doi.org/10.1016/S1473-3099\(20\)30984-1](http://dx.doi.org/10.1016/S1473-3099(20)30984-1). PMID:33357518.
9. Portaria n.º 343, de 17 de março de 2020 (BR). Dispõe sobre a substituição das aulas presenciais por aulas em meios digitais enquanto durar a situação de pandemia do Novo Coronavírus - COVID-19. *Diário Oficial da União, Brasília (DF)*, 18 mar 2020: Seção 1: 39.
10. Portaria n.º 345, de 19 de março de 2020 (BR). Altera a Portaria MEC n.º 343, de 17 de março de 2020. *Diário Oficial da União, Brasília (DF)*, 19 mar 2020: Seção 1: Extra.
11. Portaria n.º 544, de 16 de junho de 2020 (BR). Dispõe sobre a substituição das aulas presenciais por aulas em meios digitais, enquanto durar a situação de pandemia do novo coronavírus – Covid-19, e revoga as Portarias MEC n.º 343, de 17 de março de 2020, n.º 345, de 19 de março de 2020, e n.º 473, de 12 de maio de 2020. *Diário Oficial da União, Brasília (DF)*, 17 jun 2020: Seção 1: 62.
12. Lira ALBC, Adamy EK, Teixeira E, Silva FV. Nursing education: challenges and perspectives in times of the COVID-19 pandemic. *Rev Bras Enferm*. 2020;73(Suppl 2):e20200683. <http://dx.doi.org/10.1590/0034-7167-2020-0683>. PMID:33111782.
13. Souza KR, Santos GB, Rodrigues AMS, Felix EG, Gomes L, Rocha GL et al. Trabalho remoto, saúde docente e greve virtual em cenário de pandemia. *Trab Educ Saúde*. 2021;19:e00309141. <http://dx.doi.org/10.1590/1981-7746-sol00309>.
14. Minayo MCS. O desafio do conhecimento: pesquisa qualitativa em saúde. 8ª ed. São Paulo: Hucitec; 2011.
15. Leigh J, Vasilica C, Dron R, Gawthorpe D, Burns E, Kennedy S et al. Redefining undergraduate nurse teaching during the coronavirus pandemic: use of digital technologies. *Br J Nurs*. 2020;29(10):566-9. <http://dx.doi.org/10.12968/bjon.2020.29.10.566>. PMID:32463742.
16. Yeo SC, Lai CKY, Tan J, Gooley JJ. A targeted e-learning approach for keeping universities open during the COVID-19 pandemic while reducing student physical interactions. *PLoS One*. 2021;16(4):e0249839. <http://dx.doi.org/10.1371/journal.pone.0249839>. PMID:33831082.
17. Gusso HL, Archer AB, Luiz FB, Saha FT, Luca GG, Henkain MHO et al. Ensino superior em tempos de pandemia: diretrizes à gestão universitária. *Educ Soc*. 2020;41:e238957. <http://dx.doi.org/10.1590/es.238957>.
18. Adedoyin OB, Soykan E. Covid-19 pandemic and online learning: the challenges and opportunities. *Interact Learn Environ*. 2020;1-13. <http://dx.doi.org/10.1080/10494820.2020.1813180>.
19. Riegel F, Martini JG, Bresolin P, Mohallem AGC, Nes AAG. Developing critical thinking in the teaching of Nursing: a challenge in times of Covid-19 pandemic. *Esc Anna Nery*. 2021;25(spe):e20200476. <http://dx.doi.org/10.1590/2177-9465-ean-2020-0476>.
20. Bezerra IMP. State of the art of nursing education and the challenges to use remote technologies in the time of coronavirus pandemic. *J Hum Growth Dev*. 2020;30(1):141-7. <http://dx.doi.org/10.7322/jhgd.v30.10087>.
21. Saraiva K, Traversini C, Lockmann A. Educação em tempos de COVID-19: ensino remoto e exaustão docente. *Prax Educ (St Rosa)*. 2020;15:e2016289. <http://dx.doi.org/10.5212/PraxEduc.v.15.16289.094>.
22. Araújo FJ, Lima LS, Cidade PI, Nobre CB, Rolim ML No. Impact of Sars-Cov-2 and its reverberation in global higher education and mental health. *Psychiatry Res*. 2020;288:112977. <http://dx.doi.org/10.1016/j.psychres.2020.112977>. PMID:32302818.
23. Silva CM, Toriyama ATM, Claro HG, Borghi CA, Castro TR, Salvador PICA. COVID-19 pandemic, emergency remote teaching and Nursing Now: challenges for nursing education. *Rev Gaúcha Enferm*. 2021;42(esp):e20200248. <http://dx.doi.org/10.1590/1983-1447.2021.20200248>.
24. Castro MR, Sousa KHJF, Nascimento FPB, Tracera GMP, Santos KM, Zeitoune RCG. Challenges for humanization in the work of Nursing educators. *Rev Gaúcha Enferm*. 2020;41:e20190390. <http://dx.doi.org/10.1590/1983-1447.2020.20190390>. PMID:33237221.
25. Julião AL. Professores, tecnologias educativas e COVID-19: realidades e desafios em Angola. *RAC: revista angolana de ciências*. [Internet]. 2020 [citado 2021 abr 29];2(2):e020205. Disponível em: <http://publicacoes.scientia.co.ao/ojs2/index.php/rac/article/view/105>
26. Huang R, Tilili A, Chang TW, Zhang X, Nascimbeni F, Burgos D. Disrupted classes, undisturbed learning during COVID-19 outbreak in China: application of open educational practices and resources. *Smart Learning Environments*. 2020;7(1):19. <http://dx.doi.org/10.1186/s40561-020-00125-8>.
27. Barbosa AM, Viegas MAS, Batista RLNFF. Aulas presenciais em tempos de pandemia: relatos de experiências de professores do nível superior sobre as aulas remotas. *Rev Augustus*. 2020;25(51):255-80. <http://dx.doi.org/10.15202/1981896.2020v25n51p255>.
28. Silveira A, Santos NO, Wilhelm LA, Soccol KLS, Tissot ZL, Prates LA. Estratégias e desafios do ensino remoto na enfermagem. *Enferm foco*. 2020;11(5):98-103. <https://doi.org/10.21675/2357-707X.2020.v11.n5.4302>.
29. Bao W. COVID -19 and online teaching in higher education: a case study of Peking University. *Hum Behav Emerg Technol*. 2020;2(2):113-5. <http://dx.doi.org/10.1002/hbe2.191>. PMID:32510042.
30. Gemelli CE, Closs LQ, Fraga AM. Multifformidade e pejotização: (re) configurações do trabalho docente no ensino superior privado sob o capitalismo flexível. *REAd Rev Eletrôn Adm*. 2020;26(2):409-38. <http://dx.doi.org/10.1590/1413-2311.289.101464>.
31. Wang J, Wang Z. Strengths, weaknesses, opportunities and threats (swot) analysis of China's prevention and control strategy for the COVID-19 epidemic. *Int J Environ Res Public Health*. 2020;17(7):22-35. <http://dx.doi.org/10.3390/ijerph17072235>. PMID:32225019.
32. Keener TA, Hall K, Wang K, Hulsey T, Piamjariyakul U. Relationship of quality of life, resilience, and associated factors among nursing faculty during COVID-19. *Nurse Educ*. 2021;46(1):17-22. <http://dx.doi.org/10.1097/NNE.0000000000000926>. PMID:32941307.
33. Santos HMR. Os desafios de educar através da Zoom em contexto de pandemia: investigando as experiências e perspectivas dos docentes portugueses. *Prax Educ (St Rosa)*. 2020;15:e2015805. <http://dx.doi.org/10.5212/PraxEduc.v.15.15805.091>.
34. Brooks SK, Webster RK, Smith L, Woodland L, Wessely S, Greenberg N et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*. 2020;395(10227):912-20. [http://dx.doi.org/10.1016/S0140-6736\(20\)30460-8](http://dx.doi.org/10.1016/S0140-6736(20)30460-8). PMID:32112714.
35. Bezerra CB, Saintrain MVL, Braga DRA, Santos FS, Lima AOP, Brito EHS et al. Impacto psicossocial do isolamento durante pandemia de COVID-19 na população brasileira: análise transversal preliminar. *Saude Soc*. 2020;29(4):e200412. <http://dx.doi.org/10.1590/s0104-12902020200412>.
36. Cecílio S, Reis BM. Trabalho docente na era digital e saúde de professores universitários. *Educ Teor Prat*. 2016;26(52):295-311. <http://dx.doi.org/10.18675/1981-8106.vol26.n52.p295-311>.



37. Cortez PA, Souza MVR, Amaral LO, Silva LCA. A saúde docente no trabalho: apontamentos a partir da literatura recente. *Cad Saude Colet.* 2017;25(1):113-22. <http://dx.doi.org/10.1590/1414-462x201700010001>.
38. Camacho ACLF, Joaquim FL, Menezes HF, Sant'Anna RM. Tutoring in distance education in times of COVID-19: relevant guidelines. *Res Soc Dev.* 2020;9(5):e30953151. <http://dx.doi.org/10.33448/rsd-v9i5.3151>.

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