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#### ARTICLE

# PERSONAL, PROFESSIONAL AND ACADEMIC LIFE DURING THE PANDEMIC: CHALLENGES COPED BY STUDENTS OF PPGENFIS/ FEDERAL UNIVERSITY OF ESPIRITO SANTO<sup>1</sup>

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**ABSTRACT:** Our objective is to analyze the challenges coped by students in the personal, professional, and academic dimensions during the novel coronavirus pandemic. We realized a qualitative and exploratory research, in the first semester of 2020. The questionnaire was used as the means of data production and collection (we accepted responses for 11 days). 22 postgraduate students answered it at the beginning of the pandemic. The Discursive Textual Analysis was used as a means of data analysis. The adaptation to new types of work, the familiar and parental cares, and mental well-being affected by the pandemic were challenging to 18 students. These have been more significant to women. To the four other students, this is a favorable moment, because they have more time to do the academic work. We consider that the results can provide subsidies for establishing actions for personal and academic care, in addition to methodological decisions for emergency remote teaching.

Keywords COVID-19 in Brazil, maintenance of life, academic demands during the pandemic.

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## VIDA PESSOAL, PROFISSIONAL E ACADÊMICA EM TEMPOS DE PANDEMIA: DESAFIOS ENFRENTADOS POR ESTUDANTES DO PPGENFIS/UNIVERSIDADE FEDERAL DO ESPÍRITO SANTO

**RESUMO:** Nosso objetivo é analisar os desafios enfrentados por estudantes nas dimensões pessoal, profissional e acadêmica durante a pandemia do novo coronavírus. Realizamos um estudo qualitativo e exploratório no primeiro semestre de 2020. Os dados foram produzidos e coletados no início da pandemia por meio de um questionário (aberto durante 11 dias) respondido por 22 estudantes do Mestrado Profissional em Ensino de Física da Universidade Federal do Espírito Santo. A interpretação pautou-se na Análise Textual Discursiva. A adaptação às novas formas de trabalho, o cuidado parental e familiar e o bem-estar mental, influenciados pela pandemia, se constituíram como desafios para 18 estudantes, sendo mais intenso para as mulheres. Para outros quatro participantes o momento mostrouse favorável por dar-lhes mais tempo para dedicação às atividades do mestrado. Entendemos que nossos resultados forneceram subsídios para o estabelecimento de ações para o cuidado pessoal e acadêmico, além de contribuir para as decisões metodológicas para o ensino remoto emergencial.

Palavras-chave: COVID-19 no Brasil, manutenção da vida, demandas acadêmicas na pandemia.

# VIDA PERSONAL, PROFESIONAL Y ACADÉMICA EN TIEMPOS PANDÉMICOS: DESAFÍOS QUE ENFRENTAN LOS ESTUDIANTES DE PPGENFIS/ UNIVERSIDAD FEDERAL DE ESPIRITO SANTO

**RESUMEN:** Nuestro objetivo es analizar los desafíos que enfrentan los estudiantes en las dimensiones personal, profesional y académica durante la pandemia del nuevo coronavirus. Llevamos a cabo un estudio cualitativo y exploratorio en la primera mitad de 2020. Los datos fueron producidos y recopilados a través de un cuestionario (recibimos respuestas durante 11 días) respondido por 22 estudiantes de maestría profesional en enseñanza de física da Universidad Federal do Espírito Santo, al inicio de la pandemia. El proceso analítico se basó en el análisis textual discursivo. La adaptación a nuevas formas de trabajo, el cuidado parental y familiar y el bienestar mental, afectados por la pandemia, se presentaron como desafíos para 18 estudiantes, siendo más intensa para las mujeres. Para otras cuatro asignaturas, el momento resultó favorable porque les dio más tiempo para dedicarse a la producción académica. Entendemos que nuestros resultados pueden proporcionar subsidios para el establecimiento de acciones para ayudar a los estudiantes en las dimensiones personal y académica, además de contribuir a las decisiones metodológicas para la educación remota de emergencia.

Palabras clave: COVID-19 en Brasil, mantenimiento de la vida, demandas académicas en la pandemia.

#### INTRODUCTION

The new coronavirus pandemic (Severe Acute Respiratory Syndrome Coronavirus 2 – Sars-Cov-2 causing Coronavirus Disease 2019 – COVID-19) is considered the most severe viral respiratory syndrome since the H1N1 influenza pandemic in 1918 (FERGUSON et al., 2020). Measures such as social distancing, quarantine, and even lockdown were adopted by different countries to stop the spread of the virus. These measures had implications for education. In Brazil, basic and higher education institutions suspended face-to-face activities in 2020. The Federal University of Espírito Santo, the locus of this study, applied this measure on April 6, 2020, for Undergraduate and Graduate courses, as stated in resolution number 07/2020 CEPE/UFES. The same document suggests remote work and the replacement of in-person guidance, research, and defenses with virtual ones.

This change caused different impacts on the personal, professional, and academic lives of teachers, researchers, and students. In an article written for the Journal FAPESP, Pierro (2020a) showed data from a survey prepared and carried out by the ResearchGate portal, involving three thousand scientists from all over the world, during the pandemic. The results of this study revealed that 45% of respondents had more time to read books and articles; 43% had more time to write scientific articles; and 43% said they had dedicated more time to establishing new collaborations and partnerships during this pandemic period. The report also features an interview with Darren Alvares, head of products at the portal, who stated that researchers spent more time online browsing the platform and making connections and meetings, which gave rise to new collaborations so that scientific activity was not declining during this period but transforming. For example, scientists working in field research sought methodological alternatives, such as digital ethnography and remote interviews, to continue their investigations and academic activities (PIERRO, 2020a).

Some Higher Education professors pointed out that the suspension of face-to-face activities allowed them to move away from administrative tasks and institutional issues, resulting in more time for research. The economy with commuting (home-University) was also cited as an advantage (PIERRO, 2020a; MARQUES, 2020a). On the other hand, a study by the Federal University of Rio Grande do Sul that investigates the effects of the pandemic on Graduate students across Brazil revealed, in preliminary results with more than 4800 respondents, that 80% of Master's and Doctorate students were being, in some way, harmed by social distancing restrictions. A total of 34% said they feared delays in completing the research and 44% wanted to request a postponement of the work completion date (PIERRO, 2020a). The challenge of maintaining academic and professional demands was (or has been) greater for women who are mothers because remote work tends to be added to parental care and domestic services. Preliminary data from a study by the Parent in Science project, with more than five thousand respondents, reveals that only 9.9% of women with children can work remotely, compared to 17.4% of men with children (PIERRO, 2020b).

The government of the State of Espírito Santo launched a program on April 14, 2020, that provides basic education students with non-face-to-face pedagogical activities. This involves the transmission of school content on open television and the use of the Google Classroom platform, through an application. At the same time, teachers were assigned the task of preparing, posting, and correcting activities for students through the previously mentioned platform. For researchers who have children at a young age, remote teaching has not been an option, and parental care tends to be more demanding. Once again, the burden tends to fall on women, who end up sacrificing part of the time dedicated to academic demands to take care of domestic tasks and tasks related to motherhood. Consequently, there is a possibility that the pandemic will cause an increase in gender inequality in Science (STANISCUASKI et al., 2020).

This scenario shows changes and reorganizations of personal, professional, and academic routines to meet the respective demands. Students in the Professional Master's program in Physics Teaching at the Federal University of Espírito Santo are included in these three spheres. This is because professional master's degrees constitute a *stricto sensu* Graduate modality aimed at continued training in the exercise of work activity. To this end, the curricula are designed to articulate current knowledge, methodological mastery, and application-oriented to the given field of activity (BRASIL, 2017). In other words, Graduate students are mostly basic education teachers. As Graduate students, they need to deal with the impacts of the pandemic on the academic world. At the same time, as basic education teachers, they need to deal with the impacts on their profession, whilst also considering the implications for everyone's personal lives.

Despite the suspension of in-person classes in April 2020, the research orientation remained, as well as the demands of the profession in remote work. This led us to question how the pandemic affected the personal, academic, and professional lives of these master's professors, within their respective particularities, at the beginning of the pandemic. Especially due to tensions related to the postponement of the National High School Exam (Enem-*Exame Nacional do Ensino Médio*) (CARVALHO, 2020) and the suspension of the academic calendar of Universities<sup>3</sup>; the challenges of remote teaching in basic education such as access to classes and tasks for students (PINHO, 2020), and the maintenance of mental well-being that can be affected, for example, by the fear of being infected by a potentially fatal virus (CARVALHO et al., 2020). Therefore, we propose to analyze the challenges faced by professional master's students in Physics teaching in their personal, academic, and professional lives during the period of social distancing, due to the new coronavirus pandemic.

#### METHODOLOGY

We carried out qualitative and exploratory research. This method is appropriate when seeking to develop and clarify concepts and ideas, increasing the researcher's familiarity with the phenomenon. In this way, the ability to diagnose situations, explore alternatives, or discover new ideas is enhanced, even if there is already prior knowledge on the topic (GIL, 2008). This methodology seeks to observe as many manifestations as possible of the phenomenon under study. Therefore, flexibility becomes an essential element, and this is reflected in the variety of data production tools and the time for carrying it out (SAMPIERI et al., 1991).

The data was produced and collected through an online questionnaire on the Google Forms platform, designed to provide us with a profile of the participants and allow them to tell their stories about the topic. This tool was inspired by the questionnaires of Danyelle Nilin Gonçalves and Irapuan Peixoto Lima Filho, professors at the Federal University of Ceará, and Kelmara Mendes Vieira, a researcher at the Federal University of Santa Maria. The questionnaire used consists of 24 objective questions, distributed in the following sections: characterization of participants, with questions about

<sup>&</sup>lt;sup>3</sup> All these questions were open when we collected research data (first half of 2020).

gender, age, internet resources available, etc.; professional aspects, with questions about the type of employment relationship, stage of activity, working hours, etc.; and elements related to social distancing, with questions regarding its influence on academic productivity. For these questions, we offered space for participants to explain how this occurred.

Finally, we included a narrative-generating question. This resource has, both in its oral and written form, the potential for reflection processes (GALVÃO, 2005). The narrative is a way of understanding representations of the interviewees' experiences. The act of telling stories plays an important role in shaping social phenomena since every human experience can be narrated. From this perspective, we opted for narrative so that participants could articulate their experiences, using their language, hoping that the phenomenon would reveal itself better (JOVCHELOVITCH; BAUER, 2002). Next, we present the narrative-generating question.

I want you to tell me the challenges you are facing, during this period of social distancing, to maintain your academic productivity. The best way to do this is to start by describing what your current demands are and how you have dealt with them, compared to the demands you had and how you dealt with them before the distancing (if these elements have changed). You can include details about the nature of the challenges you have faced, and other elements related to them. You can also tell details not covered in the previous questions, as everything you want to tell interests us. Therefore, there are no line limits for this answer.

The study was duly authorized by the coordination of the master's program, which made the access link to the questionnaire available via email to students regularly enrolled between April 24th and May 4th, 2020, the period in which the questionnaire accepted responses. We obtained 22 returns. Before responding, students needed to agree to participate through an informed consent form. This established, among other items, that participation was voluntary, in addition to ensuring the anonymity of respondents. For this reason, we used fictitious names for everyone involved in the research. The narratives presented throughout this text were transposed faithfully. Therefore, occurrences of colloquial language were maintained to preserve the authenticity of the speeches.

To understand what the narratives show about the phenomenon under study, in a way articulated with the data from the objective questions, we resort to the assumptions of Discursive Textual Analysis (DTA). We dismantled and fragmented the texts seeking to establish relationships between the units of analysis to the categorization process. From this process, we developed metatexts that are related to the process of construction and reconstruction of ideas by the researcher in articulation with empirics and references, in a perspective of complexity and systemic vision, which reflects in new understandings established with the categories and in the development of final considerations (GALIAZZI; RAMOS; MORAES, 2021). Our analysis shows three categories, which represent the dimensions contained in the research objective: personal, academic, and professional life. Such categories were defined a priori and had their meanings expanded as we advanced in the analytical process. This even gave rise to two subcategories in the discussion of the personal life dimension of research participants: family and parental care; and psychological impacts of the pandemic. It is important to highlight that the same narrative may contain elements common to two or more categories. This shows a movement that sees categorization as a way of focusing everything through the parts (MORAES, 2003). We agree with Nóvoa (2000, p. 17) when he says that "it is impossible to separate the professional self from the personal self". In this sense, we assume that the influence of the pandemic on work and academic demands is linked to personal life. Therefore, it is not surprising that the categories are constituted as a continuum.

After completing the research, we shared the results with the master's professors through a live broadcast organized by the PPGEnFis coordination. This act was part of a series of weekly virtual meetings, planned by the program, as a way of keeping students (among them the respondents of this research) involved with Graduate Studies. The conduction was carried out so that this moment could constitute a verification by the participants (*member cheack*), increasing the credibility of our interpretations (MOREIRA, 2018).

#### Survey participants

The objective questions revealed the following profile of the research participants: 16 men and six women responded to the questionnaire; fifteen live in the metropolitan region of Vitória (capital of ES); everyone was working, 17 of them working in public institutions, one working only in a private institution, three in both networks and one person worked but without an employment contract. Only one master's student was not teaching at the time, as he was working as a police officer. The others were mostly working in high school classes (19 respondents) in the state public network, 10 of whom were temporary, eight permanent, and one who worked exclusively in the private network. Fourteen participants were aged between 25 and 34; 10 master's students did not have children; eight people had one child each and four respondents had two children. Of these 12 participants with children, six were taking remote classes and six were not. All participants said they had broadband internet at home, a smartphone, and a computer (desktop or notebook).

#### ANALYSIS AND DISCUSSIONS

In this section, we present the analyses and understandings arising from the narratives (combined with the answers to the objective questions) of the 22 research participants.

#### The professional life of master's students

New professional demands arose due to the suspension of face-to-face activities in basic education, which were considered challenging.

Sandro: The biggest challenge is to separate moments from online work tasks and return to writing the dissertation since the Department of Education's platform is new and requirements are constantly discussed and reinterpreted in meetings, which leaves our work and time behind these changes.

Davi: The fact of having to plan activities based on classes from other teachers and developing other activities at school for students who don't attend classes, plus being at home all the time always comes up with a task besides increasing production reduces production time.

Marcos: Stresses; Locomotion; Reconcile class and work.

Alex: A lot of time is dedicated to platforms and online classes in addition to remote activities with managers. [...] I currently teach in two schools, where the work dynamics during this quarantine have become terrible. I normally work 6 hours a day, currently, I have worked more than 10 hours due to the search for using platforms and other mechanisms for remote studies. I confess that before the quarantine, my dissertation writing was much more intense, but with

such demands from schools and other tasks, writing is becoming more difficult every day. Matheus: with the increase in tasks due to activities being completely online, work time practically doubled, a class that I used to prepare took 1 hour, now takes 2 to 3 hours depending on the content. The demand has increased a lot, the demand from the families of the students in the institutions where I work. This has affected me a lot in my writing because with so many activities to do, I have been sleeping much less than necessary but I can't finish the tasks.

Sandro and Davi taught in high school in the state public network. Both narratives highlighted the challenge of dealing with the remote teaching method adopted by the Government of the State of Espírito Santo, which affected the time dedicated to academic demands. In a study with 11 teachers from the municipal network of Rio Grande do Sul, Costa (2019) found that teachers were insecure about using the Google Classroom platform. They highlighted that they believe in the tool's potential to contribute to the educational process, but they lack continuous training to use resources of this nature. This helps us understand Sandro's narrative, as the insertion of new tools requires the training of professionals to operate them. Given the unprecedented and emergency nature of the new coronavirus pandemic, the time for such training may not have existed.

Challenges in dealing with virtual teaching methods were reported by teachers and managers of educational institutions. Some private schools brought vacations forward due to difficulties with remote resources (SOUZA, 2020; GODOY, 2020). This reasoning can be extended to understand Davi's narrative, which highlighted the challenge of developing activities for students based on content broadcast on television. He also highlighted the fact that some students do not follow these classes, which required teachers to develop strategies to overcome the situation and include students in the educational process.

The inequality in access to remote education was explained by Godoy (2020) and by data from the Continuous National Household Sample Survey - Information and Communication Technology (PNAD Contínua TIC-*Pesquisa Nacional por Amostra de Domicílios Contínua - Tecnologia da Informação e Comunicação*) in 2018, released by IBGE, which revealed that one in four people in Brazil do not have access to the internet (TOKARNIA, 2020a). The State education network program closed the first month (April 2020) with the engagement of 70% of students on the Google Classroom platform, according to monitoring carried out by the Government of the State of Espírito Santo<sup>4</sup>.

Alex and Matheus' narratives indicate an overload of work associated with new forms of remote teaching. Both worked in the private network, Alex exclusively and said they were working more than before the pandemic. Private institutions had the autonomy to establish remote teaching actions. Therefore, we do not know exactly what technological and digital means these teachers dealt with but both said that they carried out the following professional activities: lesson planning, recording classes for the internet, preparing exercises to send to students, guiding students on some platform virtual, holding virtual study group chats and forums, reading student work, meetings with managers, meetings with other teachers and writing texts for articles, and dissertations. Alex further stated that he was carrying out research along with all these activities.

According to Palhares (2020), private schools adopted several strategies such as live classes via the Internet, exercise lists via email, and discussion forums via WhatsApp. This helps us understand

<sup>&</sup>lt;sup>4</sup> Source: https://sedu.es.gov.br/Not%C3%ADcia/escolar-fecha-primeiro-mes-com-70-de-engajamento-dos-alunos-da-rede-estadual-a-plataforma-google-sala-de-aula. Acesso em 01 de Mar. 2023.

the growth in Alex and Matheus' work demands. This increase in the supply of services may be an attempt to compensate for the lack of face-to-face classes, as there was tension between legal guardians and educational institutions about reducing the value of monthly fees, still without a definitive position from the courts (TOKARNIA, 2020b).

In this category, we discuss how social distancing has changed how professional demands are carried out. In addition to the challenges of these tasks, such as knowing how to deal with virtual platforms, executing them remotely was another obstacle to be overcome. In other words, it seems that adapting to new ways of working required more time from master's students, resulting in an overload of work, and this may have resulted in less time available to dedicate to academic demands.

Marcos' narrative did not explain how stress and mobility are related to the fulfillment of professional demands. He revealed the challenge of "reconciling classes and work", but without providing details on how he achieved this balance. Marcos taught at a state high school and said that he was working more than before the pandemic. He said he worked between four and eight hours a day, more than five days a week. The 'commuting' element may be associated with the fact of not having to travel to school due to the remote teaching system, and this could give him more time for other tasks. In this sense, some changes in the ways of working may have resulted in time savings, allowing other tasks to be carried out, such as those of the master's degree.

It is important to remember that the data collection for this research was carried out between April and May 2020 and that, possibly, the participants narrated moments at the beginning of the school year and the pandemic. The Government of the State of Espírito Santo took some time to implement remote teaching and the means to be established. Therefore, for some, this hiatus may have resulted in a reduction in work demands, initially, and, consequently, there was more time for master's tasks. We will extend the investigation of this hypothesis with the analysis of the academic dimension.

#### The academic life of master's students

This category addresses how the pandemic affected the academic lives of PPGEnFis/UFES students. We are talking about how social distancing has interfered with how research is guided and developed.

João: online activities are not as productive; and less time with peers.

José: I have more time to read but it is difficult for me to be self-taught. [...] It has been difficult to understand some proposed texts or exercises.

Pedro: As for the difficulties, they mainly refer to the formatting of writing the dissertation, especially how to make references in the text. Often a paragraph may contain more than one reference.

Paulo: I have no advisor and no Contemporary Physics classes.

Caio: The only challenge is in the direct consultation with the teacher/advisor. Otherwise, despite the situation, for me, it is a good time for research.

Social distancing has given new contours to the supervisor-master's student relationship. Research guidance actions became virtual, which required adaptations to this new form of interaction. In Brazil, the guidance task tends to take on a tutorial nature (VERHINE, 2008). In this way, the difficulty in consulting the advisor may have constituted a challenge in meeting academic demands, as highlighted by Caio, and may be intensified by the lack of this professional, as in Paulo's case. Possibly, this master's student must be entering the 2020 class, as the program's selection process establishes the number of vacancies but does not link entry directly to an advisor. According to the Regulations, the program has up to three months to approve the appointment of advisors to each of the new students, after joining PPGEnFis.

The advisor, who is one of the few people who follows the master's student's trajectory throughout the postgraduate course, becomes a working partner who accepts demands and helps in the development of coping strategies (VERHINE, 2008). This includes the formatting and norms of academic writing, as in the case of Pedro's narrative, and the clarification of doubts about theoretical references, as highlighted by José.

Some of these demands are often worked on in research group meetings coordinated by professors-supervisors, which provide interaction between peers. These actions were suspended due to the pandemic, at least in person, which may be related to João's narrative. Marques (2020c) confirms the importance of the teacher keeping the students motivated and active in the face of the challenges that this distance relationship has caused to emerge. There are reports of advisors who have held individual and small group meetings to mobilize and support students academically and emotionally. The end of Caio's narrative draws attention, as for this participant the pandemic moment favored the development of his research. Pedro, Thiago, and Rafael also agreed on the opportunity of the moment to carry out the master's assignments. This is because these participants said they now have more time to dedicate to these activities.

Pedro: On the one hand, my academic productivity has improved significantly, as I love writing and studying and now, I have a lot of time.

Thiago: I have more time to read and write the dissertation.

Rafael: More time to dedicate to developing materials that will help in my research.

Caio: Now I have more time available to read more calmly, looking for solutions to doubts that arise from different points of view.

This time seems to be associated with a reduction in professional demands because three of these master's students stated that they were working less than before the pandemic (only Rafael said that he is working more). Work obligations constitute an important parameter in the context of professional master's degrees, since, as previously presented, students normally work while pursuing their postgraduate degree. Machado, Santos, and Silva (2020) point out that excess work is an element present in the teaching profession. Gouvêa (2016), based on documents from the National Confederation of Education Workers, showed that work overload leads teachers to carry out tasks at home due to insufficient contracted working hours. Consequently, there is a lack of time for daily tasks and leisure. This allows us to assume that it also applies to the time required for Graduate studies.

The four respondents indicated that they needed more time to dedicate to academic demands taught in public high school, with Pedro and Caio having temporary contracts, while Thiago and Rafael were civil servants. Working hours, during social distancing, ranged between four and eight hours a day, with Pedro, Thiago, and Caio working less than five days a week. Rafael said he worked more than five days a week. Regarding the activities carried out in that period, we see the writing of the dissertation as a common element for all. The others varied according to Box 1. Rafael seems to differ from the other three about professional demands. However, the continuation of his narrative helps us understand the context. Rafael said: "[...] Until yesterday I was working every day of the week, at least seven hours a day, but I am interrupting this cycle as I consider it excessive." This narrative suggests that the response was given based on the routine he said he was interrupting.

New professional demands arose due to the suspension of face-to-face activities in basic education, which were considered challenging.

Activities	Pedro	Thiago	Rafael	Caio
Conducting research	Х		Х	
Lesson planning		Х	Х	Х
Preparation of exercises to send to students		Х	Х	
Meetings with managers		Х	X	
Recording classes for the internet			X	
Student guidance on a virtual platform			X	
Meetings with other professors			X	

Box 1: Activities carried out during the period of social distancing.

Source: survey data.

Similarly, Peter's narrative provided more details about his situation. Pedro said: "[...] In Minas/Mutum the schools are closed, and they are trying something remotely. But still nothing!" These narratives show that the network in which he worked did not implement remote teaching immediately, which enabled a reduction (although it may be temporary) in professional demands. This may have resulted in more time dedicated to academic activities. We do not have data to infer whether Thiago, Rafael, and Caio now have more time for their master's degree tasks due to the reduction in work demands, even though they said that they were working less than before the pandemic. As pertinent as this hypothesis may be, it does not establish a cause-and-effect relationship, given that five other master's students (Maria, João, José, Rosa, and Paula) also said that they were working less than before the pandemic, but they are unable to maintain their dedication to the course.

Only Pedro, Thiago, Rafael, and Caio agreed with the opportunity of the moment to develop academic demands. Their narratives contrast with those of the first category (professional life), in which work overload, caused by social distancing measures, affected the time dedicated to the master's degree tasks of some participants. This highlights the uniqueness related to how the pandemic affects people's lives. The time obtained through a possible reduction in work activities may have been consumed by other demands also arising from the pandemic, which leads us to look at the elements of the personal lives of master's students to understand this process.

Pedro, Thiago, Rafael, and Caio are male. Only Thiago had children (two) and his wife was (at that time) mainly responsible for household chores. The low female presence in the field of Natural Sciences is an issue that does not reflect the proportion of women in Brazil, as they constitute 51.7% of the population (IBGE, 2018). This theme was part of the speech by the director of the Brazilian Center for Physical Research (CBPF-*Centro Brasileiro de Pesquisas Físicas*), Ronald Shellard, at the opening of the 4th International Conference on Women in Science without Borders, on February 12, 2020, at CBPF. Shellard highlighted that in Physics the imbalance between men and women has been accentuated for a long time and that this problem is related to cultural issues and socially determined roles (GROTZ, 2020). A possible reflection of this is that 16 people who responded to the research instrument were male and six were female. Only eight of the 61 master's theses defended at PPGEnFis/UFES, between 2014 and 2019, were authored by women. No woman who participated in this research indicated that the time of social distancing during the pandemic was favorable to the development of academic demands.

Elizabeth Hannon, deputy editor of the British journal British Journal for the Philosophy of Science, used a social network to announce a significant reduction in the number of articles submitted by women during the period of social distancing in the United Kingdom. This fact did not occur with men. At the same time, David Samuels, co-editor of the North American magazine Comparative Political Studies, reported a 50% increase in publications written by men in April 2020 (FAZACKERLEY, 2020). In Brazil, the journal *Dados*, published by the Institute of Social and Political Studies of the State University of Rio de Janeiro, also recorded a reduction in the number of articles submitted by women during the period of social distancing (PIERRO, 2020b). Hannon's publication encouraged comments from different researchers, in which they revealed stories of abandoning projects and research collaborations because they did not feel capable of continuing them. The increase in demand for caring for children and older family members, in addition to household chores, justified such attitudes (FAZACKERLEY, 2020).

This scenario suggests that gender family and parental care bring specific contours to the influence of the pandemic in maintaining the quality of personal, academic, and professional life. We will investigate this in the next category.

#### The personal lives of master's students

In this category, we discuss the elements linked to the personal dimension of master's students. During the analytical process, two subcategories emerged: (i) family and parental care and (ii) psychological impacts of the pandemic.

#### Family and parental care

This category is organized around the narratives in which participants revealed that caring for children and older relatives constituted challenges to maintaining quality in their professional and academic lives. Ten of the 22 respondents to this survey did not have children; eight participants had a child; and four master's students had two children each. The issue of parental care was accentuated as social distancing resulted in the suspension of in-person basic education activities. Thus, remote work was added to remote professional activities and childcare, requiring a new form of organization. Couples who had to deal with this situation adopted different strategies such as having children do schoolwork side by side with their parents while they work (MARQUES, 2020b). However, this tactic did not apply to young children, requiring other ideas, as in Fábio's case.

Fábio: [...] After the start of the pandemic, I'm spending more time at home, I managed to concentrate a little to work on my dissertation, my daughter is one year and eight months old, she's a blast!!! lol... I started spending the morning with her to relieve my wife, and I stayed in the afternoon to work and try to finish writing the dissertation.

Thiago: The challenge is being able to do this (read articles and write the dissertation) at alternative times because of the children who are at home and want to play all day if they let them.

Sergio: The fact that my daughters' routine has changed, and I have a grandson (1 year and 4 months old) who lives with me, when I'm at home it's becoming very difficult or unfeasible to study. I remain working, as I belong to the essential group (police), and at home, I dedicate myself more to studies.

Fábio reports that since the beginning of the pandemic, he spent more time at home, which converges with his statement that he was partially complying with social distancing measures. Fábio said that his wife and he took turns providing parental care. This way, he was able to dedicate himself to academic and professional demands in the afternoon. The same master's student revealed that his wife was mainly responsible for domestic services, which may have affected the time needed to dedicate to the dissertation.

Thiago did not provide details about how he reconciled parental care and other tasks. However, he searched for alternative times for reading and writing the dissertation, which seems to be related to the challenge of establishing an environment conducive to fulfilling academic demands while taking care of children throughout their time at home. Sergio's narrative pointed in this direction, as he revealed that he dedicates himself to academic demands at home. However, this environment was changed by the constant presence of daughters and grandsons, which, according to Sergio, made studying "very difficult or almost unviable". Concentration, fundamental in the development of intellectual tasks, can be affected, for example, by playing, which is important during childhood. Sergio explained another variable: non-compliance with social distancing measures. Only he and Sara stated this, citing professional and/or economic reasons. Because he was a police officer, Sergio continued working (he was not teaching at the time he responded to the questionnaire) and stated that he was working the same as before the pandemic.

The two female narratives in this category are Ana and Sara, and they presented new variables.

Sara: I'm having a lot of difficulty because I'm at home and could be writing... I must accompany my son and do domestic activities... because it's just me and him... I've recently separated... Anyway, it's very difficult.

Ana: [...] When I'm working, I usually carry out my research on the bus, at the university, or at the school where I work. When I'm at home it's very difficult to study because I help take care of my grandmother who is 91 years old, and I have a cousin with schizophrenia who lives with my grandmother and freaks out about 10 times a day. With each outburst, a neighbor comes to call me to calm him down, so I must stop what I'm doing several times a day to solve problems related to my family.

According to Santos (2020, p. 15), the pandemic period will be "particularly difficult for women and, in some cases, it could even be dangerous. Women have considered "the caregivers of the world", they dominate the provision of care within and outside the family". Sara's speech corroborates this prediction, and converges with the data presented by Dr. Fernanda Staniscuaski, creator of the Parent in Science research group, at the 1<sup>st</sup> Brazilian Symposium on Maternity and Science, held between May 10 and 11, 2018. In 54 % of research mothers interviewed, they were the only caregivers for their children; 56% said they were unable to meet deadlines; and 45% said they did not have time to work from home.

Sara revealed that her son was taking online classes, and that accompanying him in completing his school tasks became a new demand following the suspension of in-person classes. Pierro (2020b) presented reports from different mother researchers who revealed that the task of accompanying their children fell mostly on them, having directly affected academic productivity, even for those who counted on the help of their partners. The interviewees also reported the overload of domestic services due to the longer time at home, in a similar way to Sara.

Ana stated that she does not usually develop academic demands at home. She had a son and cared for his grandmother and cousin, who has special needs. According to data from IBGE (2018), women are mainly responsible for activities related to domestic and family care. In 2016, Brazilian women spent, on average, 18.1 hours per week on tasks of this nature, compared to 10.5 hours completed by men. Despite the social advances that have occurred in the last century, women continue to dedicate much more time to domestic work and family and parental care than men. This difference tends to intensify among older age groups (IBGE, 2016). Once again, the gender element proved to be an important variable like the challenges faced by Graduate students.

Social distancing resulted in more people staying at home for longer periods, which increased domestic work (DW), as suggested in Sara's speech, to be added to family care and academic work demands. This is shown by the following narratives.

Bruno: When managing household chores, I have difficulty organizing my studies. [...] Before isolation, I could count on the support of a maid who helped a lot with domestic activities and with caring for my autistic brother and my father with Alzheimer's. Now I must do everything my maid used to do [...].

Rafael: I struggle with household chores and try to take care of my wife, who has had health problems every other week.

Bruno, who had a son, also took care of his brother and father, who have special needs. Before the pandemic, Bruno revealed that he had the help of an employee to carry out the DW, but that this was interrupted. His wife and he became responsible for carrying out these tasks. Thus, academic, and professional demands were added to family and parental care, in addition to the DW of a house with four people. The overload in DW was also highlighted by Rafael, who provided family care to his sick wife. We do not know if it was a temporary situation, but Rafael was the main person responsible for household chores, as only the couple lived in the house, who had no children and did not have professionals to do the household chores.

Bruno and Rafael stated that they were working more than before the pandemic, although Rafael showed that the moment was favorable for the development of academic demands. We need to remember that, in the excerpt of the narrative presented in the 'professional life' category, Rafael said that he was breaking a work cycle that he considered excessive. In other words, this master's student managed to reconcile the different demands and obtain more time for academic activities, even having to deal with the DW.

The discussions in this subcategory indicate that family and parental care intensified during the period of social distancing recommended as a mitigating measure for the pandemic and this may have consumed the time that would be dedicated to academic demands, being more arduous for women. The challenges identified so far, overload with domestic services, parental and family care, and adapting to new ways of working, apparently converged in this direction. However, the quality of time dedicated to tasks needs to be considered. By this, we mean that, in a pandemic context, there are other relevant variables, including the psychological impacts on individuals.

#### Psychological impacts of the pandemic

Ornell et al. (2020) agree that well-being and mental health can be affected by changes in routines and family relationships because of the new coronavirus pandemic. According to the World Health Organization (WHO), "health is a state of complete physical, mental and social well-being and does not consist merely in the absence of disease or infirmity" (WHO, 1946). The same Organization defines mental health as "a state of well-being in which an individual realizes his or her abilities, can deal with everyday stresses, can work productively, and can contribute to his or her community" (WHO, 2014). In these definitions, the term 'well-being' is understood as a construct of a subjective and culturally situated nature (HUNTER et al., 2013).

This scenario allows us to understand that being at home and having time to work are not the only elements necessary to guarantee personal, professional, and academic well-being during the pandemic. In this subcategory, we bring narratives that point to the direction of the mental well-being of the participants, influencing the performance of their academic activities. In other words, speeches contain elements that refer to the impossibility of dealing with daily stresses, of producing and contributing to the academic community. It is important to note that we are not proposing to carry out any discussion or clinical analysis about the mental health situation of the respondents to this research. We aim to highlight this field, as concerns about mental health cannot be ignored, as the psychological impacts can last longer than being affected by COVID-19, with different possibilities of consequences (ORNELL et al., 2020).

Maria: Staying at home for a long time seems at first like we are immersed in available time, yes, we are, but the strain of constant family life and the anxiety of staying at home due to the guidelines has caused psychological impacts that affect the good use of available time. Paula: As my husband works in a hospital that is a reference in caring for COVID-19 patients, in addition to spending the whole day alone, I feel the need to clean everything very carefully and very frequently, creating a certain amount of anxiety I can't concentrate very good at writing. Jailson: Although it seems like we have more time, productivity is lower than when we are in the rush of everyday life. [...] Anxiety is what most hinders the progress of the research.

The narratives have the word anxiety in common. Wang et al. (2020), in a study with 1210 Chinese, carried out after the WHO recognized the global emergency of the new coronavirus pandemic, reported anxiety, stress, and signs of depression as the most present impacts on the population. The same study showed that female gender and student status were significantly associated with higher levels of these psychological impacts. This was the case of Maria and Paula, who are female Graduate students.

Maria said she was fully practicing social distancing guidelines. She shared the house with three other people and had no children. Her narrative highlighted the strain generated by family life, which intensified with social distancing measures, as pointed out by Ornell et al. (2020). According to Jair de Jesus Mari, head of the Department of Psychiatry at the *Escola Paulista de Medicina* at the Federal University of São Paulo<sup>5</sup>, compulsory confinement implied a forced and sudden change of routine. In this sense, manifestations of anger at the loss of freedom are common, in addition to irritability and anxiety associated with the new reality. These reactions can generate strain on relationships with other people in a house, as Maria's statement suggested.

Paula lived with her husband and had no children. Her husband worked in the health sector, an essential service whose professionals continued to work during the most severe moments of the pandemic. In Espírito Santo (ES), the State Department of Health offered hotel accommodation for professionals in the field who worked on the front lines of the fight against the new coronavirus. This measure aimed to reduce the risk of transmission of the disease because in ES these professionals represented around 30% of the number of people affected by COVID-19<sup>6</sup> in 2020. Furthermore, many professionals in this field feared contracting the disease and transmitting it to their relatives (TAYLOR, 2019). The challenges they face in their day-to-day work can trigger or intensify symptoms of anxiety, depression, and stress (BAO et al., 2020). Therefore, these workers felt discouraged from interacting with other people, which intensifies the feeling of isolation (ZHANG et al., 2020). This helps us understand the loneliness mentioned by Paula and allows us to assume that the anxiety she experienced could be related to her husband's context, which may have led to intensifying hygiene care.

Helena: No psychological conditions to produce. [...] My routine is very heavy. I have been working 5 hours in the morning, 5 hours in the afternoon, and 5 hours at night. Some of my students are digitally illiterate, another portion only have internet via WhatsApp. We are serving students individually via WhatsApp. I must balance this with mental health problems in my family, being a mother and a housewife. The fear of getting sick is great, considering that where I live the number of tests carried out is very low.

Helena's narrative highlights the different challenges she faced. Starting with the overload of professional tasks, and she stated that she worked 15 hours a day, five days a week, more than before the pandemic. This situation seems to be related to the difficulty her students had in dealing with remote teaching methods, added to the fact that some of them only had WhatsApp as a means of distance communication, which Helena used to assist them individually. Helena lived outside the metropolitan region of Vitória and worked in high school in the state public network on a temporary assignment. The reported situation converges with the data that, in Brazil, cell phones are the most used device to access the internet, as shown by the PNAD Contínua TIC (2018), published by IBGE (TOKARNIA, 2020c). Data collected by the 'ICT Households 2019-*TIC Domicílios 2019*' survey revealed that approximately 30% of Brazilian homes do not have access to the internet. Most of them are concentrated in the interior

<sup>&</sup>lt;sup>5</sup> Available at: <a href="https://www.unifesp.br/reitoria/dci/noticias-anteriores-dci/item/4395-quais-os-principais-efeitos-da-pandemia-na-saude-mental">https://www.unifesp.br/reitoria/dci/noticias-anteriores-dci/item/4395-quais-os-principais-efeitos-da-pandemia-na-saude-mental</a>. Access on May 27th, 2020.

<sup>&</sup>lt;sup>6</sup> Source: https://www.agazeta.com.br/es/cotidiano/em-24h-quase-todos-os-novos-casos-de-covid-19-no-es-sao-de-profissionais-da-saude-0420&gt. Access on May 1st, 2023.

of Brazil. If we only consider the rural area of the country, the situation worsens: less than 50% of homes have access to the network (TENENTE, 2020).

Helena lived with her son. Therefore, being a mother and a housewife were elements that added to the challenge of work overload, which is what we discussed in the previous subcategory. She also mentioned mental health problems in the family, without providing further details. Perhaps this is related to family care. Faced with this scenario, Helena stated that she was unable to produce. She reported the fear of contracting COVID-19, which is an element that can affect people's mental wellbeing. The fear is related to the low testing carried out in Brazil at that time (BARRUCHO, 2020), which had more pronounced effects on the peripheral population, which is more vulnerable due to sanitary, economic, and social conditions, among others (MACEDO; ORNELLAS; BOMFIM, 2020).

Rosa: In the beginning, what bothered me most was the distraction of newspapers and news, I was very worried about everything and wanted to research it all the time. Then the challenges were different, I had to start using the "free time" I gained due to social isolation to help some family members who are part of the risk group (3 families) by carrying out some tasks such as going to the supermarket, getting medicine financed by the government and go to the bank. These tasks still take up a lot of my time. Furthermore, I have difficulty concentrating since I need to share the workspace with another person (husband). [...] While some people say they have idle time, I have the feeling of being overwhelmed by taking on tasks that I didn't have before, I am physically and mentally tired.

Rosa's narrative revealed a concern with the news, which often portrayed the scenario of deaths in Brazil and around the world, and the lack of consensus between the federal government and medical authorities (VASCONCELOS, 2020). These symptoms, as discussed previously, may have affected the mental well-being of master's students. Another challenge highlighted by Rosa was sharing the remote workspace with her husband. As we discussed throughout the first two categories, social distancing measures required new ways of working and studying, which were more complex when carried out in parallel with other people, such as spouses and children.

These factors help us understand the mental fatigue mentioned by Rosa, which was added to the physical one, from the moment she started helping three families affected by social distancing measures, as they contained people of what was considered at the time as a "group of risk". She took on tasks related to traveling to establishments, such as supermarkets, pharmacies, and banks. This took up the time she could dedicate to academic demands.

#### FINAL CONSIDERATIONS

At this point, we extracted some lessons through the categories and interpretation of the objective data from the questionnaire. We seek to synthesize the understandings arising from the research, understanding that any reflections and discussions arising from this study do not end here.

In this research, we propose to analyze the challenges faced by students of a Professional master's degree in physics teaching in their personal, professional, and academic lives during the beginning of the new coronavirus pandemic in 2020. The participants' narratives and characterization data highlighted some of these challenges and provided details about their nature. This is because the personal, academic, and professional dimensions are too complex and idiosyncratic to be highlighted in their entirety.

At first, time proved to be a resource to be rationed and intelligently distributed to maintain personal, academic, and professional demands with a certain quality. Therefore, the variables arising from the pandemic that caused a reduction or overload of demands, which consumed more or less time, influenced the actions of master's students. Social distancing measures, which suspended face-to-face classes, influenced this process, because as education professionals, teachers had to adapt to remote teaching, for some, this resulted in a reduction in work demands, but for many resulted in overload; while fathers and mothers began to deal with their children in remote classes at home, which required monitoring. On a personal level, more time at home generated more domestic work and family care, in addition, sharing the home, which became a place of work and study, with other people proved to be challenging in the process of reconciling the demands of everyday life. The last two elements fell mainly on women.

The time dedicated to the different demands proved to be vulnerable to the pandemic and subject to the mental well-being conditions of master's students. The fear of the disease, the strain on personal relationships intensified by confinement, and feelings of anxiety confirmed that it was not enough to just have time, it was necessary to have the quality and conditions to use it in favor of the diverse demands of personal, professional, and academic life. The effects of the pandemic are still unfolding and studies on them are recent. Thus, we understand that this research showed a field full of uncertainties, as the challenges faced by research participants may have transformed, given the indeterminacy of the duration and consequences of the pandemic (XIAO, 2020).

In the context of the master's program in which this study was developed, and after discussing these results with the entire academic community, actions such as holding virtual meetings of study groups and guidance, in addition to weekly online seminars, built on the demands brought by teachers and students, were encouraged by the coordination, understanding that they could contribute to everyone's well-being. Knowing the students and the challenges they faced at that time, even if only partially, provided support for the development of actions relevant to the personal and academic care of master's students, in addition to contributing to methodological decisions for the emergency remote teaching that was established at the University in September 2020.

Today we live in a different moment compared to the period in which the data was produced, analyzed, and shared with the program's students and teachers. We surpassed 600,000 deaths, new variants of the virus emerged, we have many vaccinated and we managed to remove a scientific denier from the presidency. In-person activities returned, as well as the pre-pandemic routine. We are still understanding certain implications of the pandemic in the field of education, as many studies carried out during and after the height of the pandemic period are being published. Specific or permanent sequelae to people's health, impacts on the learning of students at different levels, and the development of research are some points to be investigated and inventoried, with temporality being a fundamental element in understanding and situating the discussions.

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### AUTHOR'S CONTRIBUTIONS

Author 1 – Production and data collection, data analysis, and writing of the manuscript. Author 2 – Data analysis, text writing, review of the final writing.

### DECLARATION OF CONFLICT OF INTEREST

The authors declare that there is no conflict of interest with this article.