

RESEARCH ARTICLE

# Feelings Related to the Academic Path in Virtue of the COVID-19 Pandemic: Testimonies from Portuguese Higher Education Students Attending Healthcare Courses

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**Introduction:** In Portugal, two periods of confinement were implemented due to the COVID-19 pandemic (i.e., March 2020, January 2021), and closing the educational institutions was one of the containment measures adopted. Medical students felt the impact of these confinement periods because healthcare education has a very high practical component in the context of clinical teaching: it is impossible to teach these healthcare disciplines via distance learning methodology.

**Aims:** This study aims to identify the feelings related to the academic path in higher education students attending healthcare courses as a consequence of confinement.

**Methods:** The sample included 133 students, aged between 18 and 55 years, 77 (68.1%) were female. This was a qualitative and cross-sectional study using a content analysis approach. The measurement instrument included an online questionnaire.

**Results:** From the results, demotivation, anxiety, insecurity and fear of being contaminated stand out as the most present and reported student feelings. All these new feelings led to a shift in the mental health status, which most students currently classify negatively as a result of all the changes experienced during this time. Most students expressed negative feelings resulting from the pandemic, asserting that confinement interfered with their academic path in a negative way regarding their mental health.

**Conclusions:** The decrease in practical classes led to a feeling of insecurity and fear in patient care. It is suggested that the mental health of university students be monitored during epidemics in order to try to minimize the impacts caused on their mental health.

**Keywords:** SARS-CoV-2, students, confinement, feelings, coping strategies

## Introduction

Due to the pandemic outbreak the coronavirus – SARS-CoV-2 – caused, in order to prevent the disease's spread, the Portuguese government has been adopting public health measures necessary to protect the entire population.

Between March and May 2020, Portugal adopted the first period of confinement, including the closure of schools (Diário de Notícias, 2020a) With the worsening of the pandemic situation, in January 2021, the Portuguese government decided on a new phase of confinement (República Portuguesa, 2021). It was not only in Portugal that these measures were verified: more than 166 countries closed their schools, affecting over 87% of the world's student population, 1.52 billion students with approximately 60.2 million teachers who no longer were in the classroom (UNESCO, 2020a).

A study carried out by the Portuguese International Labor Organization revealed that 65% of young people considered they had learned less since the beginning of the pandemic and that more than 70% who studied or combined study with work were negatively affected by the closure of schools, universities, and training centers (Caetano, 2020).

The period of confinement produced a face-to-face social distancing that itself can lead to health problems, since social support stands as a strong and consistent predictor of health outcomes, being related as it is to mental health (Smith et al., 2015) and social isolation carries association with a higher risk of mortality and morbidity due to chronic diseases (Geirdal et al., 2021).

The COVID-19 pandemic brought with it a new reality and paradigm shifts in the educational context of higher education institutions (Bloom et al., 2020). During the confinement, classes within Portugal took place again in a distance-learning regime, a phenomenon that can lead to constraints in the pedagogical methodology of disciplines having a practical nature, such as healthcare courses. In the United States, orthopedic residents are using web-based educational tools as a means of learning, and surgical simulators to ensure the continuous development of those residents (Kogan et al., 2020).

In addition to the change in the manner of teaching classes, many internships were interrupted or postponed due to this situation, causing constraints producing delays in the academic path. Another consequence resulting from the pandemic was the increase in the number of the unemployed (Mateus & Rosa, 2020), making it difficult to sustain the financial expenses imposed by completing a higher education course. In January 2021, the unemployment rate in Portugal increased to 7.2% (Mateus, 2021).

It is believed that the period of confinement resulting from the pandemic and the health consequences of the virus – such as the risk of mortality and changes in the economy – can lead to changes in the population's mental health, including students (Cao et al., 2020).

Since up to this day, very few studies exist that evaluate mental health in students, this study aimed to assess the feelings in higher education students attending healthcare courses, related to the academic path, as a result of the confinement due to the COVID-19 pandemic.

## Methods

The study has a qualitative and transversal nature, using the conventional content analysis approach, and was approved by the Research in Education and Community Intervention (RECI), Piaget Institute research unit. A content analysis involves a research method that allows data to be verified systematically and reliably.

All individuals were informed about the study's objectives, having been informed that the anonymity of the answers would be guaranteed and that they could withdraw at any time during the study, without any kind of prejudice.

### Sample

The study population consisted of higher education students from the Jean Piaget School of Health in Algarve, Piaget Institute of Silves.

The Jean Piaget School of Health in Algarve offers three different degree courses in the health sector, namely Nursing, Physiotherapy, and Osteopathy. In the 2020/2021 academic year, 233 students had been enrolled.

The inclusion criteria cumulatively involved students of any sex and age enrolled in this school year at this institution, and willing to participate voluntarily.

## Measuring Instrument

The instrument used for data collection included an online questionnaire, which was disseminated on social networks and through messages; it contained open questions and the responses to these questions were analyzed qualitatively.

The researchers prepared the questionnaire and divided it into two parts: a socio-demographic characterization of the population and one on feelings arising from the pandemic situation.

The questionnaire's first section included multiple-choice questions about gender, age, the course the student is taking, year of the course, whether the student was attending any clinical education, whether the student had already undergone clinical education during the pandemic, whether the student performs some professional activity, and, if so, whether this profession is related to the health sector. The second part of the questionnaire included the following six open-ended questions: How do you currently feel in an academic context due to the pandemic?; How is the pandemic interfering with your academic career?; What are the consequences that the pandemic could have on your academic path and/or professional future?; How would you describe your mental state before the pandemic and at the present time?; What strategies did you find/mobilize to face the changes in your life due to the pandemic?; How has the pandemic changed you as a person?

## Data Analysis

With the collected material, we built our investigation using a qualitative approach based on the Content Analysis proposed by Laurence Bardin (2011). The content analysis according to Bardin aims to obtain the contents of the indicator messages through systematic procedures and descriptive objectives, allowing the inference of knowledge related to the conditions of producing and receiving these messages (Bardin, 2011).

Content analysis, according to Bardin's perspective, consists of a methodological technique that can be applied to different discourses and to all forms of communication, whatever the nature of its support. In this analysis, the researcher seeks to understand the characteristics, structures, or models that lie behind the message fragments taken into account. The analyst's effort is, therefore, twofold: to understand the meaning of communication – as if he were the normal receiver – and, above all, to look away, seeking another meaning, another message, which can be seen through or alongside the first (Bardin, 2011).

Bardin (2011) indicates that the use of content analysis includes three fundamental phases: pre-analysis, material exploration, and treatment of results – inference and interpretation.

In the first stage, the interviews were read and reread to get a sense of the whole, to get an idea of what were the main points or ideas that the participants were expressing. The next step consisted of identifying and condensing sentences and paragraphs to formulate categories and then group these categories into subcategories. The answers were coded to the subcategories and their respective sub-subcategories.

The analysis is mainly accomplished by a content analysis of the answers given to the six open-ended questions in the questionnaire. Some main categories are made directly from the topic of each question (e.g., the category "Interference in the academic path" is made based on the question "How is the pandemic interfering with your academic career?").

## Results

The sample included 133 students aged between 18 and 55 years ( $25.5 \pm 8.4$ ), 77 (68.1%) were female and 36 (31.9%) were male. Fifty-eight (51.3%) of the students who took part had a degree in Physiotherapy, 42 (37.2%) in Nursing and 13 (11.5%) who took part had a degree in Osteopathy.

Thirty-four (30.1%) of the students who took part had clinical education during government-imposed confinement.

Fifty-five (48.7%) students performed clinical teaching during the pandemic.

Thirty-seven (32.7%) students were employed (working students), and 28 (75.7%) of those were employed in healthcare.

Regarding the content analysis, eight categories were created, namely: Feelings towards the pandemic; Interference in the academic path; Consequences on the academic/professional path; Mental state before the pandemic; Current mental state; Mental status before and during the pandemic; Strategies mobilized; Personal changes in the face of the pandemic.



Figure 1. Word cloud of feelings experienced by students due to COVID-19

### Feelings About the Pandemic

Researchers divided this category into two subcategories, which included feelings or emotions classified as positive and as negative. A feeling is considered positive when it causes a sense of well-being, generating pleasure and satisfaction. A feeling is considered negative when it causes a feeling of unease, generating discomfort and displeasure.

Within these subcategories, sub-subcategories were included, with labels assigned to each of the feelings or emotions. Most students reported negative feelings, and the main labels mentioned were: unmotivated, anxious, insecure and afraid.

Some of the answers students gave to questions regarding these feelings were:

- The feeling is a kind of conditioning the level of learning, due to constantly changing clinical teachings.
- Concerned that the quality of my learning isn't the best.
- I feel tremendous agony, since the pandemic made it difficult for students to learn from and communicate with each other.
- A little scared because things are getting worse.

Figure 1 shows the adjectives used to create the sub-subcategories of these subcategories.

### Interference with the Academic Path

Students were asked how the pandemic was interfering with their academic path. The process of internalization and knowledge construction requires a quiet space without any kind of interference. The created subcategories were: non-interference in the academic path and the interferences that can harm this path.

Most students reported that this confinement was negatively interfering with their path, limiting it due to changes in the quality of classes that were no longer face to face, and the impediment to attend practical classes and clinical teaching, making it difficult to acquire important skills.

In the following, we list some responses from students that highlight this category:

- I should be doing my internship and the pandemic delayed me, so I'm going to finish my course later and enter the labor market.
- Due to the pandemic, there was a need to adapt the education, making it more theoretical.
- Regarding the quality of learning, i.e., I would like the classes to be more dynamic.
- It prevents me from having practical knowledge.

## Consequences on the Academic/Professional Path

This new period of confinement brought some negative consequences on the academic path for students, since the teaching-learning methodologies were conditioned, moving from face-to-face to distance learning. We moved from face-to-face teaching, in the classroom, to distance learning, due to the obligation of social distancing. Increasingly more practical classes and clinical teachings had to be adapted to be taught at a distance or postponed, delaying the academic path and/or compromising the acquisition of practical skills.

In addition, the number of patients seen at the health services was also reduced, which implies a smaller number of patients that students had contact with during the clinical teaching period. This lack of practical knowledge application during the course may harm students when completing their studies, making them more insecure professionals.

The manifestations of these feelings are perfectly visible through the following expressions:

- Related to the university, many consequences result: not being able to touch harms immensely, having a face mask makes it difficult to pronounce the words for those who have a difficulty being heard, the lack of qualified internships for these purposes, and much more...
- Difficulties in clinical internships due to a lack of manual practice.
- Probably having too few practical classes and having little contact with my colleagues/teachers. Communication is extremely important in nursing.
- I can have poorer learning, in clinical practice, due to the lack of face-to-face moments and a shortage of patients, as well as due to conditioned learning in theoretical-practical classes.

When asked about “How would you describe your mental status before the pandemic and at the present time?”, some students did not answer how their mental status stood before the pandemic, referring instead only to the current status. That said, three distinct categories were created and described below. Regarding mental health status, there were responses about the health status *before* the pandemic, responses only about the *current* health status (during the pandemic), and then another category that included the responses wherein students compared their health status before the pandemic to their current one. A mental state consists of a characteristic involving a person's mind and forms several classes, including perception, pain experience, belief, desire, intention, emotion and memory.

## Mental State Before the Pandemic

The majority of students rated their mental health status before the pandemic positively, including good, stable, safe, healthy, motivated, happy, and positive states.

Some of the phrases used to classify this state were:

- Before the pandemic I felt happy and fulfilled for having entered the university.
- Before the pandemic: stable.
- Before I was more positive.

## Current Mental State

The overwhelming majority of students classified the current mental state negatively, with adjectives such as anxious, nervous, impatient, tired, afraid, insecure and worried included in the sub-subcategories of the negative subcategory.

Some of the phrases used to classify this current state of health were:

- It's certainly worse now.
- I feel more psychologically tired and sad.

## Mental State Before and During the Pandemic

This category was created from students' responses when they compared their mental state before and during the pandemic, and included phrases such as:

- Before, reasonably well; since the pandemic, a deep depression to the point that it affected personal, academic and professional life.
- Happy and with expectations before the pandemic, then tired and without courage for the future.

## Strategies Mobilized

At the time of the study, we were in a second period of confinement. Students had to readjust to this new reality and create strategies to overcome this moment in the best way possible. Most students resorted to physical exercise, others strictly adhered to the established protection measures, some students started a type of hobby or new activity, and others invested in training.

Below are some answers that illustrate this category:

- I started taking walks, exercising at home and cooking more. These activities kept me busier and more positive.
- As I have more free time, I exercise and study.
- More accentuated cleaning of hands and care in general.
- Doing things I normally wouldn't have time to do because I'm not at home so much.
- I found and developed new hobbies when it wasn't necessary to study.
- More hours devoted to studying.

## Personal Changes in the Face of the Pandemic

For this category, three subcategories were created, which included changes classified as positive, negative, and no change. Most students reported positive changes due to this pandemic situation. For positive changes, sub-subcategories were included, and the most mentioned were: being more careful, valuing the moment and people, personal and professional development, being calmer and being open to change. As for negative changes, the sub-subcategories included anxiety, stress, less socialization, insecurity and fear.

The expressions that evidence this category are:

- More respect for human life and valuing the moment more.
- It changed me in terms of thinking about my actions and what I really want for my life.
- It taught me how to learn to be patient, develop more empathy, and think about others.
- It made me give importance to things that I didn't care so much about before.
- Revolted. Furious at people's mindset.
- It made me insecure, afraid to be with other people, afraid to risk my life and others' lives.
- It made me more anxious and a little afraid of the future.

## Discussion

The COVID-19 pandemic caused several changes in people's daily lives, including changes in the educational sector. Face-to-face classes were suspended, and educational establishments adopted the methodology of distance classes. In this second confinement period, only theoretical evaluations were allowed to be held face-to-face.

Health courses have a very high practical component, and thus distance teaching is difficult. Some subjects had their practical component adapted to distance learning, with video viewing as a teaching strategy, training techniques with individuals who lived in the same house, among others. Despite teacher efforts, distance classes also present constraints related to internet connection, where sometimes the network is not available, making it difficult to keep up with classes.

E-learning teaching provides a flexible model of student-centered learning, in contrast to the didactic transmission of education models. Despite all the constraints mentioned above, this new type of teaching has shown evidence of good academic results in health care courses (Carolan et al., 2020).

Attending higher education also involves aspects other than just learning. Socializing with colleagues and teachers is also part of it. Communicating in a face-to-face classroom is different from communicating in a virtual classroom.

Ma et al. (2020) verified that students who had low perceived social support were 4.84–5.98 times more likely to have symptoms of anxiety and depression compared to students who had high perceived social support.

The clinical teaching period remains another very important aspect in health courses: it is where students can apply, in a real context, the theoretical and practical knowledge they acquire in the classroom. Some clinical teachings suffered interruption or cancellation, thus delaying the academic path. Where clinical teaching was allowed, due to confinement rules imposed by the Portuguese Government, the number of patients was reduced depending on the space, reducing the amount of time for real context practice. Another situation regarding the internships concerns the proximity with the patient during care activities, which can bring feelings of contamination fear despite the care taken, and the fear of risking virus transmission to closer, older family members with



co-morbidities. Many health professionals who were student tutors were mobilized to care for patients with COVID-19 and, in another phase of the pandemic, others started the vaccination process, and, only recently, the nursing students, who were carrying out clinical education, were expected to receive the vaccine; the same did not occur for the physiotherapy and osteopathy students who, in the course of this study, were not expected to be vaccinated. Even though all students were exposed to the same risks as health care professionals, they were not being vaccinated and no provisions existed for vaccination.

Eweida et al. (2020) evaluated the mental health of 150 nursing students in a clinical teaching context and the data revealed that 77% of the students felt under pressure, 65% considered themselves useless and 63% depressed, and the factors that generated the most stressful situations were the possibility of contracting COVID-19 infection and transmitting it to family members.

All these changes, which the pandemic brought about in terms of teaching, generated some feelings of demotivation in students since these courses imply a proximity in the relationship with the patient, either through manual techniques or through communication, and both aspects had to be discontinued or adapted.

Students felt that their learning was impaired. Anxiety, insecurity and fear of being contaminated were other feelings that the students mentioned, since the uncertainties of when this situation would return to normality were many. Son et al.'s (2020) study revealed that 91% of students felt fear and worry about their own health and of their loved ones during the pandemic.

All these new feelings led to a change in mental health status, which most students currently classified negatively as a result of all the changes experienced at the time.

Teixeira et al. (2021) evaluated 656 Brazilian medical students during confinement and the results revealed that 63% of the students displayed signs of psychological distress and 81.4% reported having experienced some type of psychological or behavioral change during confinement.

Ma et al. (2020) evaluated 746,217 Chinese higher education students during the COVID-19 outbreak (in February 2020) and found that 45% of the participants had mental health problems involving stress, as well as depressive and anxiety symptoms.

Changes in mental health were also verified in a study by Cao et al. (2020), who evaluated 7,143 medical university students in China. The results indicated that 0.9% of respondents had severe anxiety, 2.7% moderate anxiety and 21.3% mild anxiety.

Son et al. (2020) evaluated the effects of the COVID-19 pandemic on United States student mental health and showed that 71% of the students indicated increased stress and anxiety due to the COVID-19 outbreak.

These previous studies present quantitative data, used in the discussion only to illustrate that students' mental health constituted a worldwide problem. The qualitative studies found referred to health professionals, not students in this area.

The interruptions of some practical classes, the distance learning, the impediment to perform practical techniques, hindering the acquisition of these skills, the delay in carrying out clinical teaching – among other factors – interfered with the academic path, delaying it. Final year students felt this delay more strongly, experiencing a setback in the completion of their course and in their possible entry into the labor market.

In order to try to overcome this situation, minimizing damage to their mental health, some students used strategies to adapt to this new reality. Because they had a longer idle period at home, due to confinement, some students chose to practice physical exercise since their individual practice was allowed outdoors. It served as a way to get out of the house without suffering reprisals, in addition to the benefits at the hormonal level that the exercise practice presents. Other strategies used during confinement involved a greater concern for complying with distancing and hygiene standards established to prevent virus transmission. More idle time at home also allowed initiating or returning to some other activities or hobbies, as well as training.

UNESCO (2020b) states that the practice of meditation and yoga serve as tools that focus on controlled breathing; this can help control anxiety and confusion during the period of confinement, yoga also functions as a practice of physical exercise, which can bestow even more benefits for the mind. In addition, the report states that healthy eating, other physical exercises, using online games or social media to stay connected with friends and colleagues, and a proper sleep routine are all tools that can protect mental health.

This whole panorama, which already spans more than one year, promoted reflections and positive personal changes in the students, providing a greater sense of empathy as well as valuing each moment experienced and the people who were close, feelings that in the rush of daily life were not otherwise considered.

## Strengths and Limitations

The data obtained in this study may have practical benefits for the field of student mental health, revealing a need for increased attention to the mental health of students who themselves will be future health professionals in the coming epidemics.

A limitation of this study was the use of a double question (“How would you describe your mental state before the pandemic and at the present time?”), in which some students tend to answer only a part of the question, as it occurred in this research. This study also did not compare possible groups of respondents based on their demographic characteristics. Future studies are recommended to understand the differences concerning sex, age group and working-non working status with regard to the results in this content-analysis.

## Conclusion, Implications and Future Directions

The epidemic brought not only the risk of death from infection, but also a great psychological pressure on the students evaluated in this study sample. The majority of the students expressed negative feelings, such as a lack of motivation, anxiety, and insecurity.

The period of confinement imposed by the COVID-19 pandemic interfered with the academic path in a negative way, and may have contributed even more to the worsening of mental health, classified by most students as negative.

The reduced training of professional techniques also led to a feeling of insecurity and fear related to patient care.

This study reinforces the importance of monitoring the mental health of university students and suggests that the mental health of university students should be monitored during epidemics, voluntarily and with consent; it also promotes the creation of support mechanisms in order to try to minimize the impacts caused on their mental health by the pandemic.

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### Author contribution

Beatriz MINGHELLI: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, writing original draft, writing review and editing.

Elsy TAVARES: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, supervision, writing original draft.

Teresa PINHEIRO: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, supervision, writing original draft.

All authors gave their final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

### Declaration of interest statement

The authors have no conflicts of interest to disclose.

### Ethical statement

This manuscript is the authors' original work.

The studies involving human participants were reviewed and approved by the Research in Education and Community Intervention (RECI), Piaget Institute Research Unit.

All participants engaged in the research voluntarily and anonymously, and provided their written informed consent to participate in this study.

Data are stored in coded materials and databases without personal data, and the authors have policies in place to manage and keep data secure.

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