COVID – 19 and psychiatry teaching during the outbreak of the pandemic at the Eduardo Mondlane Medical School

Maria Salomão Pedro¹, Antonio Palha², Maria Ferreira³

¹Department of Medicine, Faculty of Medicine, Eduardo Mondlane University, Hospital Central de Maputo, Cidade de Maputo, 1164.1102, Mozambique
²Psychiatry Department, Faculty of Medicine, Oporto University, Portugal, Oporto, 4200 – 319, Portugal
³Department of Public Health and Forensic Sciences and Medical Education, Faculty of Medicine, Oporto University, Oporto, 4200 – 319, Portugal

Abstract

Background: The COVID-19 pandemic had a considerable impact on the lives of the world’s population, which led to the closure of educational institutions including in Mozambique. In March 2020, the state emergency forced students and professors to change in-person classes to online learning because of the pandemic.

Objectives: To access students’ capacities in terms of technological resources to participate in the 5th-year online classes of the Eduardo Mondlane University Medical School and the difficulties they encountered throughout the year. Additionally, psychological symptoms associated with confinement and how that affected participation in psychiatry and mental health classes were assessed.

Methods: A cross sectional social online questionnaire survey was conducted among 32 students enrolled in the 5th-year psychiatry and mental health classes of the Eduardo Mondlane University Medical School during May and June 2021.

Results: A total of 47 students were invited to participate in this survey, of which 32 students (68%) participated. Of the participants, 16.7% reported the presence of psychological symptoms associated with confinement. All students could participate in online classes using cell phones, computers, and tablets. However, 34.4% did not have a laptop. In this study, 87.5% of the respondents reported poor internet quality, and 12.5% of students did not have internet and had to join colleagues to participate in classes and to interact with the members of their groups. Most of the students (90.6%) were not prepared or knew how to use google classroom, Skype, and Zoom, before the lockdowns.

Conclusions: The study suggests that the abrupt and radical change from in-person teaching and learning methods to remote online methods showed the weaknesses of students in terms of resources.
(computers, tablets, internet) and knowledge for the implementation of online classes. Psychological symptoms were present but did not affect student participation in remote psychiatry and mental health classes.

**Keywords**
Medical education, Teaching of Psychiatry, COVID-19, psychological and economic influence.
Abbreviations
COVID-19: Coronavirus disease 2019
TvCabo: Tv Network by cable
UEM: Eduardo Mondlane University
WEF: World Economic Forum
WHO: World Health Organization

Introduction
In March 11, 2020, COVID-19, caused by SARS COV 2, was declared a pandemic by the World Health Organization (WHO). Till date, this disease has infected more than 435 million people and caused the death of more than 5 million. It brought challenges to the health, economic, financial, educational and tourism sectors, among others, which had to reinvent and change the work and functioning paradigm of institutions.

In Mozambique, on March 20, 2020, the President of the Republic of Mozambique, Filipe Jacinto Nyusi, in a declaration to the nation, determined the closure of schools from pre-primary to higher levels to reinforce measures to prevent the spread of the coronavirus pandemic. The Ministry of Health announced the first case of SARS COV 2 infection diagnosed in Mozambique on March 22, 2020. On March 31, 2020, the President of the Republic declared a State of Emergency, which was approved by the Assembly of the Republic on March 31, and promulgated on the same date through Article No.11/2020 which refers to the “suspension of classes in all public and private schools, from pre-school to university education”. This presidential decree was followed by two others, extending the State of Emergency for 30 days in succession, starting on May 1, and the third, published on May 29, which extends the State of Emergency until June 30, 2020.

The education sector, perhaps, is the one that has brought the most debate, due to its negative impact on the suspension of classes from daycare centers, primary secondary schools, universities to higher institutes because of the lack of technological resources and the gaps in the use of technological means by teachers and students. Most professors in the universities and technical institutes had no online teaching experience. Associated, there was a cash-flow reduction due to the drastic decrease in income caused by the non-payment of regular fees by part of the students blocking institutions from being able to modernize and adapt to the “new normal”.

The Ministry of Science, Technology, and Higher Education issued the official letter 169/MCTESTP/GM/2020 on March 21. The letter instructed subordinate institutions to draw up operating plans to ensure the continuity of classes through ICTs (emails, WhatsApp, google classroom, Zoom meetings, and other platforms).

The Eduardo Mondlane University (UEM), through the Magnificent Rector, issued several guidelines and appeals, following the recommendations of the Ministry of Science, Technology and Higher Education, the last being the V Exhortation of May 22, which states:

1. The continuity of the administrative enforcement measures inherent to the State of Emergency, approved by Decree No. 12/2020, of 2 April, which includes, among others, efforts to prevent and control COVID-19 and to ensure personal protection.

2. The application of the knowledge of researchers and professors in the different areas of expertise to support communities and national institutions in solutions for the prevention and mitigation of the new coronavirus pandemic.

3. Regular evaluation of online platforms by students and teachers to guarantee the continuous improvement of the distance learning process.

4. The intensification of strategic use of the resources that UEM has been allocating, namely the video conference laboratories and computer equipment, the bibliographic material remotely available, and the different online platforms to improve the teaching and learning process (V Exhortation, Prof. Orlando Quilambo).

UEM carried out several training courses for teachers and recommended using Moodle, Google Classes, and Zoom platforms for interaction with students, having a permanent support service for teachers and students, resuming classes in progress. Evaluations to be carried out from May 2020.

Given the short-term measures taken in March 2020, the changes negatively impacted regular classes. This research aimed to identify if the suspension of classroom lessons would have a psychological and economic influence on the
participation in online learning of the discipline of psychiatry and mental health of 5th year students at the Eduardo Mondlane Medical School. The objectives were to assess the availability and the ability of students in using technological and computer means to participate in online learning, and the difficulties that they encountered throughout the semester right after the outbreak of the COVID-19 pandemic. Additionally, this study explored the existence of psychological symptoms associated with confinement that possibly affected participation in online classes.

Methods
Ethical approval: The institution Ethics Committee of the Faculty of Medicine did not regard this project as medical or health professional research according to law, as such ethical approval was not needed.

Informed written consent with details of ethical issues (confidentiality, anonymity, and beneficence) was obtained from all the participants of this study and participants answered the survey on a personal device (e.g., computer, phone). The questionnaires did not include questions about sensitive personal data. All procedures were conducted in accordance with the principles of the Declaration of Helsinki. Participants received no monetary compensation.

During May and June 2021, a cross-sectional study was conducted on students enrolled in psychiatry and mental health classes at the Eduardo Mondlane University Medical School. This study used an online survey, produced on Google forms. The questionnaire was comprised of 27 multiple-choice questions, six of which were on the demographic characterization of the sample (Questions 1 to 6) and the others related to the topic under discussion (Availability of equipment and technology, state of mind, motivation, teaching preferences, and recommendations to improve classes). Of these 21 questions, seven were semi-open (7, 8, 13, 16, 18, 19, 20), and the last three (25, 26, and 27), were open (Underlying data).

Participants were sent a link to access information and to complete the survey via WhatsApp.

Statistical analysis
Data were analyzed using Statistical Package for Social Science (SPSS) version 24 (SPSS Inc., Chicago, IL, USA). All continuous variables were expressed as proportions (%).

Results and discussion
Of the 47 students that were enrolled in the 5th year psychiatry and mental health course at the Eduardo Mondlane University, 32 (68%) participated in this study. Half of the participants (16) were aged between 23 and 25 years, a quarter (8), aged between 20 and 22 years, seven or just under a quarter, aged between 26 and 28 years and one was above 29 years of age. The results indicated that 19 students (59.4%) were female, and 13 (40.6%) were male, in a class with a predominance of females. Regarding the place where they lived, 24 students (75%) lived in Maputo City, near the Faculty, and eight (25%) of students lived in Maputo province, more than 20 kilometers away from the school (Three in Tchumene, two in Matola, one in Fomento, one in Intaca and one in Marracuene). In total, 18 students lived with their nuclear family (56.3%), six (18.8%) lived with family members, five (15.6%) lived in a university residence, and three (9.4%) lived alone. All students lived in houses with water and electricity.

When asked about their emotional state at the time of the survey, one (3.4%) reported being depressed, four (13.3%) indicated being sad, and the majority (27, 83.3%) stated that they felt good. Pragholapati (2020), when referring to the impact of COVID-19 on students, says that their mental health is greatly affected when they face a public health emergency and need attention, psychological assistance, and support from the community, family, and institutions dedicated to mental health. The results of that study agree with other studies, which show that lockdown of educational institutions and not attending classes developed anxiety and depression disorders among students. A survey conducted by Basheti (2021) reports that students were significantly affected mentally during the pandemic, with many experiencing borderline symptoms of abnormal anxiety (22.4%) and depression (33.8%).

Regarding equipment needed to participate in online classes, 20 students (65.6%) had a computer, and 12 (34.4%) did not have a computer. Considering the ownership of tablets, 23 students (71.9%) had tablets, and nine (28.1%) did not. All students had a cell phone with IOS or an android system. For participation and access to classes, 23 the students (71.9%) used computers and cell phones, while the rest only used cell phones; 21 (65.5%) used a combination of computer, tablet, and mobile phone to study after participating in online classes (Underlying data). All students had a mobile network for internet access, and eight students (25%) also used the internet from specific internet providers (TvCabo, UEM). In this study, 29 students (90.6%) were not prepared or knew how to use Google classroom, Skype, and Zoom. Despite this lack of preparation, 31 students (96.9%) participated in classes. The main difficulties in accessing the classes were due to poor internet quality, which was reported by 28 (87.5%) students or lack of internet, as mentioned by four students (12.5%).
These were the same problems stated for the lack of interaction with the group (Poor internet quality (87.5%) or lack of internet (12.5%)) (Underlying data).

Regardless of the unavailability of tablets and computers and internet access being a concern for the faculty, students could participate in classes using a combination of computer, tablet, and cell phone and private networks. The quality of the internet network was a concern. Armstrong-Mensah et al. (2020) conducted a study at the University of Georgia which found that class participation rates were high, despite concerns about the quality of the internet. As online teaching will continue there is a need to find alternative ways for students to participate in class in Mozambique. In terms of time devoted to study, one-third of the students only dedicated themselves to individual study twice a week, and 43.8% studied on alternate days—approximately 32% of the students engaged in studying regularly. Half of the students interacted with their peers on alternate days.

In the present study, approximately 30% of students dedicated their days to studying, and this lack of motivation was due to the isolation. Tan (2020) indicates that due to the isolation, distancing and closure of educational institutions students must change their individual and group study methods and find means of study that best adapt to their realities. The change would help them find ways to improve concentration for personal study, improve interaction with colleagues, find other activities that help with motivation. Additionally, it is important for teachers to be available online. As for the methodology to improve the understanding of the content taught, universities need to organize training sessions to prepare teachers to be more effective in conveying the study content through online platforms. Regarding the information and work assigned to the students, all mentioned that the files and clinical cases were duly prepared and guided the individual study and the group study sessions.

In this study the perception of students after a few months of virtual teaching at the Faculty of Medicine of the Eduardo Mondlane University was assessed. Despite the challenges that the COVID-19 pandemic brought, students showed a great ability to adapt to the new reality, and they made an effort to maintain the level of learning. The study participants mentioned many positive and highlighting aspects that can be use in future studies (Underlying data).

It was possible to find psychological symptoms associated with confinement that affected class participation in five students (16.7%), but most of them (27) managed to deal well with the lockdown (6).

The evolution of the pandemic is uncertain, and it is up to institutions and their students to create online teaching programs and methods using the technology that best suits the reality of the institution and the country to ensure excellent training.

Conclusions
The present study evaluated the resources of students to participate in online classes and the type of difficulties faced during the lockdown period.

According to WEF, 2020, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms.

After the Declaration of the State of Emergency in Mozambique in March 2020 and the closure of teaching institutions, there was an interest on the part of students and teachers to participate and support online teaching despite the existence of several aspects that affected e-learning. This study acknowledges that the faculty did not have any policy in place for virtual learning methods nor was training provided. Owolabi (2020) states that "the existence of appropriate expertise and methods to develop virtual learning environments in adequate infrastructures and the provision of effective training or workshops on knowledge, skills and attitude of how to teach in the virtual environment would be important to provide quality teaching".

Zinyemba et al. (2021) found that there was a disparity between the students who lived in rural areas and due to their circumstances had no internet and the ones who lived in urban areas, near Wi-Fi spots. This study indicates that the students who resided outside Maputo City were the ones who complained the most about the quality of the internet and had to travel long distances in order to participate in online classes.

Mukhtar (2020) mentions that online learning modalities encourage student-centered learning which were easily manageable during lockdown situation. The results of this study showed that these fifth-year students seemed to adapt quickly to the sudden shift to online education, despite the fact that 11 (34%) of them did not have a computer to participate in classes and used only their cell phones as study device.
Lack of direct interaction between students and teachers, a feeling of being alone during studies, unfit housing situations for home office purposes, including insufficient data bandwidth, and a sense of reduced motivation and effort are the most pressing concerns among students.\textsuperscript{24,25} In this study 21 students mentioned that the State of Emergency, that led to remote classes, preventing them from having contact with colleagues and professors or having internships in the hospitals was the most difficult part of the interruption of face-to-face classes during the first year of lockdown due to the COVID 19 pandemic.

This study did not find that the psychological impact of the pandemic on students was significant although Guidotti \textit{et al.} discovered a notable percentage of neuropsychology trainees reported increased personal mental health symptoms (i.e., anxiety/depression; 74/54\%) as well as several other personal stressors.\textsuperscript{26} Huckins \textit{et al.} and Wayne \textit{et al.} concluded that compared with prior academic terms, individuals in the Winter 2020 term were more sedentary, anxious, and depressed.\textsuperscript{27,28}

Our study suggests that the abrupt and radical change in teaching and learning methods to remote online methods showed the weaknesses of students in terms of resources (computers, tablets, internet) and knowledge for the implementation of online classes.

Educational institutions and the government should consider investing in public policies for data access networks to improve the quality of the internet provided to the citizens as the “new normal” requires more significant interaction through these platforms.

Finally, there is room for improvement, in approaching the themes and assessing the knowledge and skills of students to make virtual learning environments more effective and, indeed, we can say for sure that the first year of the SARS COV 2 pandemic constituted a teaching opportunity for everyone - teachers, students, and government officials.

\textbf{Importance of the study}
To the best of our knowledge, this is the first study that evaluates the means of participating in remote classes at a medical school in Mozambique, providing a clear understanding of the material conditions of this group and the taking of some immediate measures to improve the virtual model of teaching and learning. On the other hand, the results can be used by the school of medicine and the government as a starting point to improve the quality of teaching and assessment of online methods in Mozambique.

\textbf{Limitations and further research}
The limitation of this study was its small sample size since it was confined to the students that were enrolled in Psychiatry and Mental Health classes.

More research on the subject, with samples that include students from the first to the final year of the medical course and more medical institutions could improve the knowledge about the best teaching approaches for maintaining social distancing to ensure everyone's safety.

\textbf{Data availability}
\textbf{Underlying data}
Zenodo: COVID – 19 and psychiatry teaching during the outbreak of the pandemic at the Eduardo Mondlane Medical School

This project contains the following underlying data:

Data file 1. Survey Questionnaire
DOI: 10.5281/zenodo.6533845\textsuperscript{12}

Data file 2. Survey answers -Table 1
DOI: 10.5281/zenodo.6533859\textsuperscript{15}

Data file 2. Survey answers -Table 2
DOI: 10.5281/zenodo.6533865\textsuperscript{16}
Data file 2. Survey answers -Table 3

DOI: 10.5281/zenodo.6533872

Data are available under the terms of the Creative Commons International “No rights reserved” data waiver (CC BY 4.0).

Author contributions
MSP conceptualized, wrote, prepared for submission and worked in the finalization of the article. APP contributed the critical reading, coherence and editing of the article. MAF was part of the conceptualization process and contributed to the overall writing, editing, and overseeing the coherence and writing of the ideas.

Acknowledgements
Thank you to students of the 5th year of the medical course at Eduardo Mondlane University, 2020, the professors of the discipline of Psychiatry and Mental Health, Professor Doctor João Salomão and Professor Doctor Severino Ngoenha.

References

2. WHO: WHO dashboard. Reference Source
4. Fica atento website.
5. Primeiro caso de covid 19 Moçambique.
12. Pedro MR, Palha AP, Ferreira MA: Data File (1) - Survey Questionnaire (Version V0) [Data set]. Zenodo. 2022; p. 2. Publisher Full Text
15. Pedro MR, Palha AP, Amélia FM: Data file 2. Survey answers - Table 1 (Version V0) [Data set]. Zenodo. 2022.
19. Pedro MR, Palha AP, Ferreira MA: Data file 2. Survey answers - Table 3 (Version V0) [Data set]. Zenodo. 2022; 3. Publisher Full Text
The benefits of publishing with F1000Research:

- Your article is published within days, with no editorial bias
- You can publish traditional articles, null/negative results, case reports, data notes and more
- The peer review process is transparent and collaborative
- Your article is indexed in PubMed after passing peer review
- Dedicated customer support at every stage

For pre-submission enquiries, contact research@f1000.com