

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

Aicha El Baaboua / Mariem Ben-Said
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تأثير وباء كوفيد 19 على الحالة النفسية والتعليم عن بعد بين الطلاب المغربية: دراسة
استقصائية

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Abstract:

COVID-19 was recognized to be a major danger worldwide to population health, influencing their behavior and triggering anxiety and depression. In this study, we aimed to assess the quarantine and distance learning impact, sudden implementation in response to COVID-19, on Moroccan student performance. We used an online semi-structured self-administered questionnaire. Results revealed that all students experienced stress, anxiety and depression with females presenting the greater impact. Using mainly social media, the majority of students (65%) spent less than eight hours per week following their courses. Only 21% of students achieved a good understanding of the courses. Nonetheless, many difficulties were identified among learners, especially poor access to the internet network, unavailability of communication tools, and eye pain due to excessive use of electronic tool screens. We presented practical propositions that could improve the distance learning process, and thus cope with the weaknesses that were perceived during this unprecedented period.

Keywords: Beta coronavirus; online education; Morocco; quarantine; psychological disorders.

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الملخص:

تم الاعتراف بوباء COVID-19 على أنه خطر كبير في جميع أنحاء العالم على صحة السكان، حيث يؤثر على سلوكهم ويثير القلق والاكتئاب. في هذه الدراسة، هدفنا إلى تقييم تأثير إجراءات الحجر الصحي والتعلم عن بعد، الذي تم تنفيذه بشكل مفاجئ بسبب COVID-19، على أداء الطلاب المغاربة. استخدمنا استبيان شبه منظم عبر الإنترنت. أظهرت النتائج أن جميع الطلاب عانوا من التوتر والقلق والاكتئاب وكان التأثير على الإناث أكبر. باستخدام وسائل التواصل الاجتماعي بشكل أساسي، أمضى غالبية الطلاب (65٪) أقل من ثماني ساعات في الأسبوع في تتبع الدروس. حقق 21٪ فقط من الطلاب فهماً جيداً للدروس. ومع ذلك، تم تحديد العديد من الصعوبات بين المتعلمين، لا سيما ضعف الوصول إلى شبكة الإنترنت وعدم توفر أدوات الاتصال وآلام العين بسبب الاستخدام المفرط لشاشات الأدوات الإلكترونية. قدمنا مقترحات عملية من شأنها تحسين عملية التعلم عن بعد، وبالتالي التعامل مع نقاط الضعف التي تم الوقوف عليها خلال هذه الفترة غير المسبوقة.

الكلمات المفتاحية: بيتا كورونا فيروس؛ تعليم عن بعد؛ المغرب؛ حجر صحي؛ اضطرابات نفسية.

Introduction:

In December 2019, a novel beta coronavirus had emerged in Wuhan city, China, and cause serious infection and death (Paules et al. 2020). This pathogen was formerly named 2019 novel coronavirus and related disease designed as COVID-19 (WHO, 2020). The clinical symptoms caused by this severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are mainly fever, dry cough, fatigue and breathing difficulties, but certain patients present additional symptoms of gastrointestinal origin, including nausea, diarrhea, abdominal discomfort, vomiting, and abdominal pain (Jiao et al. 2020). Shereen et al. (2020) suggest that the novel coronavirus have emerged from animal reservoirs and transmitted to humans, especially bats as the primary source and other intermediate hosts between humans and bats such as snakes, pangolin and others species. According to Gan et al. (2020), COVID-19 disease can be spread between humans through aerosol or over contact with affected persons, during virus incubation in the respiratory tract (Peeri et al. 2020). This disease is having the most overwhelming impacts globally (Roy et al. 2020).

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The emergence and spread of COVID-19 had significant emotional, ethics, overall socioeconomic and political impact on people (García-Carmona 2021). Influenced people behavior, This disease triggered feelings of confusion, fear and anxiety among populations (Roy et al. 2020). Anxiety and depression, intensified by uncertainties and the rise of the information flow, will increase broadly (Araújo et al. 2020). Media tools especially social media affect mental well-being and burden the level of anxiety (Roy et al. 2020). Brooks et al. (2020) reviewed several studies, investigating the negative psychological impact of quarantine related to the outbreak of diseases during the last two decades and highlighted a high prevalence of symptoms of psychological disorders and distress such as post-traumatic stress symptoms, anger, and confusion. The authors found that stressors comprised, among others, longer infection fear and quarantine duration (Brooks et al. 2020). In China, the outbreak of COVID-19 has triggered public panic and mental health problems (Jakovljevic et al. 2020).

On March 2, 2020, Moroccan health authorities recorded the first confirmed COVID-19 case. The Moroccan government, as many several infected countries, has been set up several unprecedented measures such as cancellation of mass gatherings and national events of all types, quarantine and closure of schools to limit the spread of COVID-19 infection. On March 16, 2020, a mass quarantine has been imposed on the whole population and all institutions of education were closed across the country until the end of 2020. Therefore, the Ministry of National Education has carried out a distance learning method for students in order to accomplish their courses at home. In Morocco, primary school for children officially starts from 6 years old and extends to 11 years old. The secondary education is divided into middle and secondary school (from 12 to 14 and 15 to 17 years old, respectively), consisting of 3 years in each level.

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Distance learning or online education is an educational approach that has been widely exploited to disseminate knowledge, in which courses, classes and conferences are conducted at distance, using wireless network and other tools (Tomlinson et al. 2013). Nonetheless, for the Moroccan public, distance learning was an unprecedented measure and thus the majority of learners, in particular secondary level, did not have the required knowledge to deal with this ‘novel’ learning method during the COVID-19 pandemic. Moreover, solitude, which would have been increased under quarantine situation, likely has had a negative effect on the teaching-learning process and, thus, on psychological suffering and pain (Araújo et al. 2020). While most of studies investigated teachers or high school or university students (Mercier 2020, 2021, Lucena et al. 2021), lower educational levels have received little attention (but see Florin et al. 2021). Thus, we expected that the closing down of schools in Morocco from March 2, 2020, until the end of that year due to the COVID-19 crisis brought about distressing consequences especially on students.

Accordingly, the present paper aimed to (1) assess the psychological impact of quarantine on Moroccan student’s performance belonging to three educational levels: middle, secondary and higher education, (2) identify and conceptualize the effectiveness of distance learning and related challenges, and finally (3) suggest practical measures in order to effectively overcome challenges identified

1. Material and Methods

1.1. Data Collection

Morocco adopted, for the first time, a distance learning process at all levels of education system. The study was performed using an online questionnaire in Arabic language to investigate student responses to the distance learning tools, during the quarantine period in the context of the COVID-19 pandemic. In this study, we only

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included students belonging to the public sector in urban areas, within which the sampling type was random. For this purpose, we used the "Google Forms" application, to survey students who followed online courses.

Indeed, data were collected online from Moroccan students between April 6, 2020, and April 20, 2020, through the WhatsApp application. The questionnaire comprised four items as follow: the first item included information about the personal profile of participants (e.g. gender, age, level of education and province). The second item aimed to assess the psychological effects of the COVID-19 pandemic. For this purpose, the Depression, Anxiety, and Stress Scale - 21 Items (DASS-21) was used (Lovibond et al. 1995). Each item is scored on a scale of zero (Did not apply to me at all), one (Applied to me to some degree, or some of the time), two (Applied to me to a considerable degree, or a good part of the time), and three (Applied to me very much, or most of the time). Moreover, each of the three DASS-21 scales contains seven items, divided into subscales with similar content. The higher DASS-21 scores indicate more severe stress, anxiety and depression symptoms.

The third item of the questionnaire included questions about the challenges and effectiveness of e-learning approaches. Finally, the latest item consisted of an open question allowing respondents to suggest potential solutions to overcome the psychological crisis (e.g. activities practiced at home) on one hand, and to improve distance learning conditions during the quarantine period on the other hand.

1.2: Data Analysis

All statistical analyses were computed-using Excel 2007 (Microsoft Corp., Redmond, WA, USA) and IBM SPSS Statistics software version 21 (IBM Corp., Armonk, N.Y., USA). A p-value <0.05 was considered significant for the t-test performed to estimate differences of psychological disorders between males and females. The total

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scores for Depression, Anxiety and Stress were calculated by summing up the scores for the relevant items and multiplying by a 2 factor, according to DASS-21- scoring guide (Lovibond et al. 1995).

2. Results

2.1. Socio-demographic characteristics of the students

During our survey, a total of 269 learners had voluntarily filled out the questionnaire. They belong to urban areas from five Moroccan regions, and most of them belong to the region of Tangier-Tetouan-Al Hoceima (97.7%; Table 1). The majority of the participants were females (i.e. 70.6%). The age groups of respondents ranged from 12 to 15 years (9.3%), 16 to 18 years (73.6%), and more than 19 years (17.1%), studying in middle school, secondary school and higher education, respectively.

Table 1. Socio-demographic characteristics of respondents

Demographic variables	Category	n	(%)
Gender	Male	79	29.4
	Female	190	70.6
Age (years)	12 to 15	25	9.3
	16 to 18	198	73.6
	19 to 22	43	16
	≥ 23	3	1.1
Educational level	Middle school	12	4.5
	Secondary school	237	88.1
	Higher education	20	7.4
Region	Tangier-Tetouan-Al Hoceima	263	97.7
	Fez-Meknes-Tafilalt	3	1.1
	Casablanca-Settat	1	0.4
	Rabat-Sale-Kenitra	1	0.4
	Beni Mellal-Khenifra	1	0.4

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2.2: Psychological status of students during quarantine

The descriptive statistics of students' psychological disorder signs were presented as absolute numbers and percentages in Table 2. The studied population generally experienced moderate stress (35.9% and 57% for females and males, respectively), but the average of females who presented different levels of stress severity was twice greater than males (47.5 against 19.7, respectively).

Table 2: Statistical description of stress, anxiety and depression following student gender

Psychological disorders	Females (%)	Males (%)
Stress subscale		
Mild (scored between 15 and 18)	53 (27.8)	4 (5)
Moderate (scored between 19 and 25)	68 (35.9)	45 (57)
Severe (scored between 26 and 33)	59 (31)	30 (38)
Extremely severe (scored more than 37)	10 (5.3)	0 (0)
Mean (SD)	47.5 (25.7)	19.7 (21.4)
Range	15-40	8-36
t-test	$p=0.028^*$	
Anxiety subscale		
Mild (scored between 8 and 9)	15 (7.9)	18 (22.8)
Moderate (scored between 10 and 14)	77 (40.5)	24 (30.4)
Severe (scored between 15 and 19)	80 (42.1)	32 (40.5)
Extremely severe (scored more than 20)	18 (9.5)	5 (6.3)
Mean (SD)	47.5 (35.8)	19.7 (11.4)
Range	8-23	8-21
t-test	$p=0.190$	
Depression subscale		
Mild (scored between 10 and 13)	23 (12.1)	9 (11.4)
Moderate (scored between 14 and 20)	29 (15.3)	16 (20.2)
Severe (scored between 21 and 27)	112 (58.9)	47 (59.5)
Extremely severe (scored more than 28)	26 (13.7)	7 (8.9)
Mean (SD)	47.5 (43)	19.7 (18.6)
Range	10-30	10-28
t-test	$p=0.281$	

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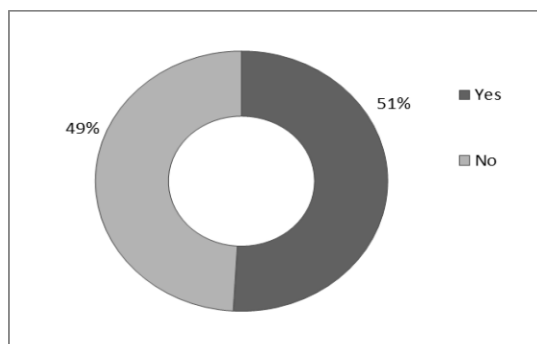
For each subscale (i.e. Stress, Anxiety, and Depression), the Mean was calculated with standard deviation (SD). Code de signification : '*': $p < 0.05$.

Both genders experienced severe anxiety with relatively similar percentage rates (Table 2). However, considering the four levels of anxiety, females showed three more times anxiety symptoms than males in different age groups. Similarly, both females and males showed severe depression with nearby percentages. However, when merging all levels of depression, females presented greater depression symptoms than males. The difference between males and females was only statistically significant for stress value ($p < 0.05$), while the p-value was not significant for the two other psychological disorders ($p > 0.05$).

2.3: Distance learning during COVID-19 pandemic

During the unprecedented circumstances related to the COVID-19 outbreak, 51% of students did not seriously take online courses compared to the rest of students (49%) for the three educational levels (Fig. 1). Concerning the time allocated to online courses, the majority of participants (65%) spent less than eight hours per week but few of them spent more than 25 hours per week (Fig. 2).

Figure 1. Percentage of student's seriousness in taking online courses

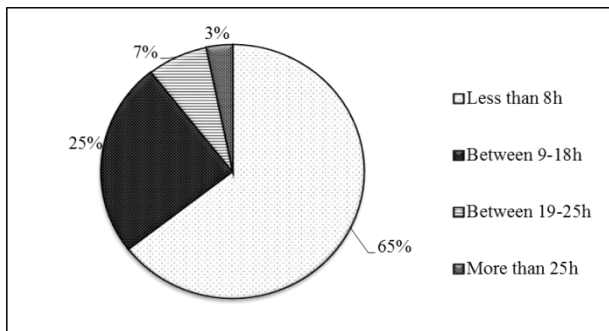


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Figure 2. Time spent by students per week in distance learning.



To get online courses, students used different tools whose the most used were social media (i.e. WhatsApp, Facebook, Skype), and YouTube channels (Fig. 3). Furthermore, they followed official TV channels and platforms accredited by the Ministry of education (e.g. TelmidTICE, Microsoft Teams) to a lesser extent because social media tools do not require high Internet connection. Whereas other applications (mainly webinars through Zoom, Google Classroom) were rarely used, and if so they were mainly used by higher education students who used also books (Fig. 3). Despite the variety of the tools and means involved during distance learning, Figure 4 indicated that most of the students achieved a medium understanding level (40%) while a similar percentage of students (i.e. 39%) stated that they did not understand the online courses due to the lack of direct interactions with teachers who can provide further explanation in the classrooms.

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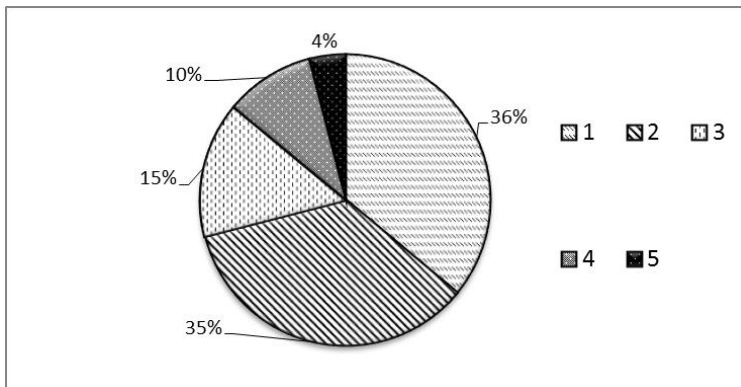


Figure 3. Main tools used by students in distance learning. 1: Through social media (i.e. WhatsApp, Facebook, Skype), 2: YouTube channels, 3: Officials TV educational channels, 4: Official platforms (e.g., TelmidTICE, Microsoft Teams), and 5: Others.

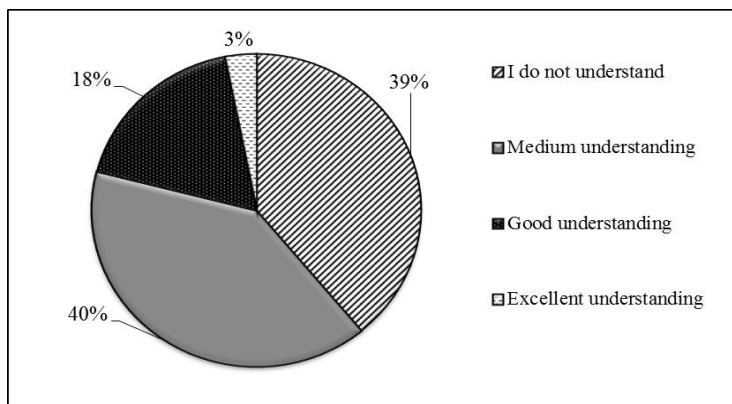


Figure 4. Proportions of student's understanding level

Multiple reasons, summarized in Figure 5, were identified to constrain a better understanding of online courses among students. We grouped these reasons into four levels of difficulties, in particular poor internet performance, high costs for getting internet access, and unavailability of communication tools especially smartphones and

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related digital skills (Mercier and Lefer, 2022) required to follow online courses. Psychological obstacles included the fact that many students did not accept to use mobile phones to get knowledge, while others showed that distance learning is inefficient particularly for scientific subjects. Pedagogical obstacles mainly comprised difficulties in the active participation and discussion with their teachers (Fig. 5). The latest obstacle, designed as physical, consisted of eye pain perceived by some students due to the excessive use of mobile or computer screens. Overall, we found that financial difficulties were the most prevailing among these four levels of obstacles.

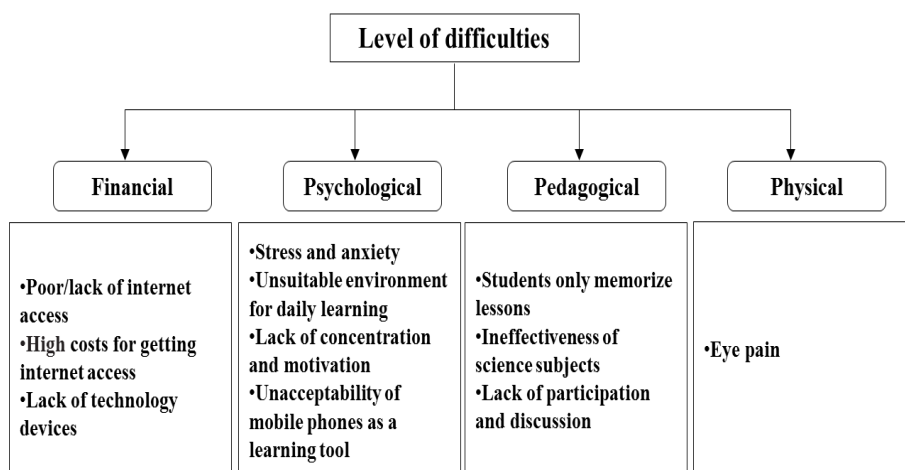


Figure 5. Distance learning challenges detected in study sample during quarantine

During their free time, most of the students practiced entertainment activities such as sport, reading, watching TV, and gaming. Indeed, during the quarantine period, 72 % of males and 80 % of females (whose 58 % and 73 % belonged to secondary school, respectively) practiced activities at home during quarantine (Table 3).

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Table 3. Number of students who practiced or did not practice entertainment activities at home, according to their gender. The activities consisted of sport, reading, watching TV, gaming, and others (such as cooking).

	Education level	Practiced (%)	Did not practice (%)
Male	Middle school	5 (6.3)	2 (2.5)
	Secondary school	46 (58.2)	19 (24.1)
	Higher education	6 (7.6)	1 (1.3)
	%	72.1	27.9
Female	Middle school	5 (2.6)	1 (0.5)
	Secondary school	139 (73.2)	34 (17.8)
	Higher education	9 (4.8)	2 (1.1)
	%	80.6	19.4

3. Discussion

Over the historical evolution of the Earth, epidemics and pandemics constitute recurrent phenomena (Roy et al. 2020), which may have serious consequences on the population at all levels and domains. Imposing distance learning during COVID-19 had triggered both opportunities and challenges for students around the world (Hodges et al., 2020; Van and Thi, 2021). The present study aimed to investigate the impact of confinement and distance learning measures related to the outbreak of COVID-19 disease on Moroccan students in urban areas.

3.1: Psychological status of students during quarantine

COVID-19 has been recognized worldwide as a major danger for both population health and the overall economy, altering the population's lives by influencing their daily behaviors and triggering feelings of anxiety and depression (Jiao et al. 2020). Public health responses to the COVID-19, mainly mandatory contact tracing and fourteen days quarantine, could intensify public both and patient psychological disorders such as anxiety (Xiang et al. 2020). Depression usually leads persons to become isolated from family

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members and friends (Petito et al. 2020). In their review, Richards et al. (2019) concluded that there was a bidirectional relationship between disturbances in sleep and anxiety-related disorders. Dar et al. (2017) also reported correlations between worry, depression and anxiety symptoms. Moreover, most studies reviewed by Brooks et al. (2020) showed that quarantine had negative psychological impacts on populations during the COVID-19 outbreak in China. However, very little is known about the impacts of disease outbreaks on the mental health of children and adolescents (Lee, 2020).

Our finding indicated that females presented greater mean values for the three psychological disorders (i.e. stress, anxiety, and depression) than males, despite the difference being only significant in for stress subscale, indicating higher symptom prevalence in females than males. In fact, many events during the COVID-19 pandemic may have caused student panic: (1) the increase in the number of confirmed cases, (2) the extended mandatory quarantine, and (3) the lack of concentration and motivation among students to follow the courses under these circumstances, especially for secondary school graduation classes. Moreover, students at home could be subjected to additional stress if there are already problems among parents or in the case of family conflicts. Indeed, positive correlations were found between life event stress, anxiety and depressed mood (Park et al. 2020). Similar results were found by Liu et al. (2020) who investigated the prevalence and predictors of posttraumatic stress symptoms during the COVID-19 outbreak in China. Indeed, the impact of depression on adolescents' mental health and social relationship could be harmful and affect their adult life (Petito et al. 2020). These impacts could be amplified among students who are simultaneously subjected to two types of stress. On the one hand, the novel distance learning method has been sudden implemented without previous practice or training (Mercier, 2021). On the other hand, their close environment seems to be unfavorable in most cases. These factors could, sometimes, limit the educational performance of

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students, and thus constrain them to achieve satisfactory results (Toussaint et al. 2022). Besides the efforts undertaken at different levels to prevent the spread of COVID-19, particular care should be paid to the psychological health problems of the general public.(Zandifar and Badrfam 2020)

3.2: Distance learning during COVID-19 pandemic

Before the pandemic crisis, distance learning was often used as an optional tool addressed to higher education students in Morocco. Students are encouraged to follow online complementary formations allowing them to get profound knowledge (e.g. in language subjects). These formations are often designated by public or private organizations, clubs or associations. However, distance learning was never mandatory before the current pandemic crisis. If higher education students could relatively easily follow online courses, it is not the case for lower educational levels. Despite out-of-school learning may create diversity in the teaching environment (Yüzbaşıoğlu et al. 2021), students of mild or even secondary schools are by far much less able to deal with distance learning, especially under the unprecedented circumstances of mass quarantine related to the COVID-19 outbreak. They deeply miss the basic requirement and abilities to cope with these novel circumstances. The situation is expected to be more aggravated for students in rural areas, who need special attention as stated by Ben-Said et al. (2021).

Our preliminary results revealed that the majority of students were unsatisfied with the online courses they followed; this was reflected by their low level of understanding (Fig. 4). The output quality was reported to have a positive effect on students' perceived effectiveness in the acceptance of distance learning (Nguyen et al. 2021). Distance learning satisfaction has been reported to be significantly correlated to several internal factors such as students' skills and emotion engagements (Baloran et al. 2021). However, few advantages have

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been cited for distance learning, including the ability of students to re-listen to the teacher's explanation. Time and effort management were found to be the most important for student performance (Neroni et al. 2019). Many students would not be able to manage their time and effort at home, particularly under the stress induced by the outbreak of COVID-19. In our study, the majority of students spent less than eight hours per week in online learning. Moreover, the absence of some degree of authority exercised by teachers could be an important factor that students missed during distance learning. Furthermore, students may miss some pedagogical abilities related to scientific subjects such as experimentation. Thus, there is an urgent need for a virtual learning context that would aid in developing students' self-learning skills (Alshwiah, 2021). It would be interesting to offer continuously online training to students in order to improve their information and communication technology skills (Adi et al. 2021).

3.3: Suggested solutions to overcome the detected challenges

In the latest item of the questionnaire, students were questioned to propose suitable solutions which may improve the process of distance learning, and thus cope with the weaknesses perceived during this hardest period, as well as to maintain well mental health after the COVID-19 crisis. Many students proposed that the Ministry should support educational establishments to get online courses, particularly in terms of providing technological devices and communication tools such as free internet access with good speed, smartphones, tablets or laptops. As in other regions across the World, internet access and technological infrastructures seem to be the major difficulty in front of distance learning system (Avsar Erumit et al. 2021). Thus, to guarantee equality in education between students, the Ministry should be sure that each student has the necessary technological devices and access to the internet to get online courses (Avsar Erumit et al. 2021). According to the students, these tools are necessary in order to ensure equal opportunities between learners and to facilitate audio-visual

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communication with their teachers. Finally, some students stated that they needed treatment against psychological disorders caused by the quarantine measure and school closure related to the coronavirus crisis.

3.4: Limitations of the study

The present investigation provided several strong points. First, this is, at our knowledge, the first study that examined the impact of distance learning imposed during quarantine measures on Moroccan student performance. Second, this work sheds light on the main challenges that obstructed governmental measures in the education system during this pandemic crisis. Finally, the results also allowed us to make an overall framework for future research.

Despite these strengths, there are some limitations that should be noted. Due to the small representativeness of all Moroccan regions and to the small sample size for middle and secondary schools, caution should be taken when extending the findings of this study to other Moroccan regions. Thus, larger scale quantitative perspective is required to draw definite conclusions about the detected patterns. Another limitation is related to the fact that this study is limited to the students who had technological tools such as smartphones (Ben-Said et al. 2021, Mercier et al. 2022). Therefore, the results should not be generalized to the whole Moroccan students given that a large range of students, especially in rural areas did not have smartphones and/or internet access. Therefore, the effectiveness of distance learning in public schools needs further investigation with studies having robust designs.

On the other hand, the pedagogy and content knowledge are expected to be enhanced with the increase of technology knowledge of teachers (Cekerol and Ozen, 2020). Since the current study has only examined students, the technology abilities of teachers should be investigated to draw conclusions about the influence of teachers'

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abilities on the performance of distance teaching. Furthermore, investigating parents' opinions about distance learning in the course of the COVID-19 pandemic would be interesting since the parents have monitored their children at home.

Conclusion:

The COVID-19 pandemic has caused serious threats to people physical and mental health. It has also triggered a wide variety of psychological disorders, such as stress, anxiety, and depression. Based on a questionnaire survey addressed to students, our finding highlighted a high prevalence of stress, anxiety and depression disorders among Moroccan students during the COVID-19 quarantine, with females experiencing greater symptoms than males. Additionally, during quarantine, distance learning seems to have unsatisfactory results, and is still poorly perceived by students. With the aim to dealing with the weaknesses stated in the present investigation and to improve future distance learning programs, some preventive measures would be recommended such exceptional circumstances: (i) more attention needs to be paid to primary and secondary education, particularly in rural zones; (ii) free internet access should further be strengthened and improved; (iii) the Ministry should support poor families to get necessary technology devices for their children, and set up training formations on distance learning to sustain pedagogical scenarios, as well as prepare the educational system to possible future pandemic waves or any unexpected events.

references:

ADI, Widi Cahya & Saefi, Muhammad & Setiawan, M. Eval & Sholehah, Najat. 2021. The impact of Covid-19 to biology teacher education: emergency distance learning at Islamic Universities in Indonesia. *Journal of Turkish Science Education*. Aug 31 2021. Vol 18.(Covid-19 Special Issue). Pp. 60-75. <https://doi.org/10.36681/tused.2021.72>

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ALSHWIAH, Abeer Aidh. 2021. Barriers to online learning: adjusting to the 'new normal' in the time of Covid-19. *Turkish Online Journal of Distance Education*. Oct 2021. Vol 22. Issue 4. Pp. 212-228. ISSN: 1302-6488.

ARAÚJO, Francisco Jonathan de Oliveira & de Lima, Ligia Samara Abrantes & Cidade, Pedro Ivo Martins & Nobre, Camila Bezerra & Neto, Modesto Leite Rolim. 2020. Impact of Sars-Cov-2 and its Reverberation in Global Higher Education and Mental Health. *Psychiatry Research*. Apr 2020. Vol 288. 112977. DOI: [10.1016/j.psychres.2020.112977](https://doi.org/10.1016/j.psychres.2020.112977)

AVSAR ERUMIT, Banu & Tanis Ozcelik, Arzu & Yuksel, Tugba & Tekbiyik, Ahmet. 2021. Examining the views of preservice teachers about online science education during the Covid-19 lockdown: expectations, opportunities, threats, motivations, and beliefs. *Journal of Turkish Science Education*. 2021. Vol 18. Covid-19 Special Issue. Pp. 2-25. ISSN: 1304-6020. <https://doi.org/10.36681/tused.2021.69>

BALORAN, Erick T & Hernan, Jenny T & Taoy, Janice. S. 2021. Course satisfaction and student engagement in online learning amid Covid-19 pandemic: a structural equation model. *Turkish Online Journal of Distance Education*. Oct 2021. Vol 22. Issue 4. Pp. 1-12. ISSN: 1302-6488.

BEN-SAID, Mariem & El Baaboua, Aicha & Asraoui, Fadoua. 2021. Distance learning during quarantine related to the COVID-19 pandemic: Reflections on some problematic of rural areas, Morocco. *Educ Research Journal*. Vol 11. (Special Number). Pp. 61–71. ISSN: 5179-2011.

BROOKS, K Samantha & Webster, K Rebecca & Smith, E Louise & Woodland, Lisa & Wessely, Simon & Greenberg, Neil & Rubin, Gideon James. 2020. The psychological impact of quarantine

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

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and how to reduce it: rapid review of the evidence. *The Lancet*. March 14 2020. Vol 395. Issue 10227. Pp. 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)

CEKEROL, Kamil & Ozen, Emin. 2020. Evaluation of teachers' technological pedagogical content knowledge within the framework of educational information network and other variables. *Turkish Online Journal of Distance Education*. July 2020. Vol 21. Special Issue. Pp. 61-78. DOI:[10.17718/tojde.770914](https://doi.org/10.17718/tojde.770914)

DAR, Kaiser Ahmad & Iqbal, Naved & Mushtaq, Arbaaz. 2017. Intolerance of uncertainty, depression, and anxiety: Examining the indirect and moderating effects of worry. *Asian Journal of Psychiatry*. Oct 2017. Vol 29. Pp. 129-133. <https://doi.org/10.1016/j.ajp.2017.04.017>

FLORIN, Agnès & Mercier, Cendrine & Ngo, Hué Thanh & Bui, Thi Thuy Hang & Zanna, Omar. 2021. Bien-être scolaire et satisfaction de vie des collégiens en France et au Vietnam au temps de la Covid-19. *Enfance*. 2021. Issue 4. Pp. 337-361. <https://www.cairn.info/revue-enfance-2021-4-page-337.htm>

GAN, Wee Hoe & LIM, John Wah & Koh, David. 2020. Preventing intra-hospital infection and transmission of COVID-19 in healthcare workers. *Safety and Health at Work*. June 2020. Vol 11. Issue 2. Pp. 241-243. <https://doi.org/10.1016/j.shaw.2020.03.001>

GARCÍA-Carmona A. 2021. Learning about the nature of science through the critical and reflective reading of news on the COVID-19 pandemic. *Cultural Studies of Science Education*. December 2021. Vol 16. Pp. 1015-1028. <https://doi.org/10.1007/s11422-021-10092-2>

HODGES, Charles & Moore, Stephanie & Lockee, Barb & Trust, Torrey & Bond, Aaron. 2020. The Difference Between

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

Aicha El Baaboua / Mariem Ben-Said



Emergency Remote Teaching and Online Learning. Educause Review. [online]. March 27 2020. Available at the address: <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>

JAKOVLJEVIC, Miro & Bjedov, Sarah & Jaksic, Nenad & Jakovljevic, Ivan. 2020. COVID-19 Pandemia and Public and Global Mental Health from the Perspective of Global Health Security. *Psychiatria Danubina*. Apr 10 2020. Vol 32. Issue 1. Pp. 6-14. <https://doi.org/10.24869/psyd.2020.6>

JIAO, Wen Yan & Wang, Lin Na & Liu, Juan & Fang, Shuan Feng & Jiao, Fu. Yong & Pettoello-Mantovani, Massimo & Somekh, Eli. 2020. Behavioral and Emotional Disorders in Children during the COVID-19 Epidemic. *The Journal of Pediatrics*. June 2020. Vol 221. Pp. 264–266. <https://doi.org/10.1016/j.jpeds.2020.03.013>

LEE, Joyce. 2020. Mental health effects of school closures during COVID-19. *Lancet Child Adolesc Health*. June 2020. Vol 4. Issue 6. Pp. 421. [https://doi.org/10.1016/S2352-4642\(20\)30109-7](https://doi.org/10.1016/S2352-4642(20)30109-7)

LIU, Nianqi & Zhang, Fan & Wei, Cun & Jia, Yanpu & Shang, Zhilei & Sun, Luna & Wu, Lili & Sun, Zhuoer & Zhou, Yaoguang & Wang, Yan & Liu, Weizhi. 2020. Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: Gender differences matter. *Psychiatry Research*. May 2020. Vol 287. Issue 112921. <https://doi.org/10.1016/j.psychres.2020.112921>

Lovibond, S. H & Lovibond, Peter F. 1995. *Manual for the depression anxiety stress scales*. Sydney, N.S.W: Psychology Foundation of Australia.

LUCENA, Rodríguez Carmen & Mula-Falcón, Javier & Domingo Segovia, Jesús & Cruz-González, Cristina. 2021. The Effects of Covid-19 on Science Education: A Thematic Review of

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

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International Research. *Journal of Turkish Science Education*. Aug 2021. Vol 18. Covid-19 Special Issue. Pp. 26 -45. DOI: [10.36681/tused.2021.70](https://doi.org/10.36681/tused.2021.70)

MERCIER, Cendrine & Lefer Sauvage, Gaele. 2022. Facteurs de protection et modélisation du bien-être universitaire des étudiants en formation à distance. In P.-O. Weiss & M. Ali (Éds.). *L'éducation aux marges en temps de pandémie*. Presses Universitaires des Antilles (PUA). ISBN : 9791095177357. Disponible à l'adresse <https://hal.archives-ouvertes.fr/hal-03811619>

MERCIER, Cendrine & Zanna, Omar & Florin, Agnès. 2022. Enquêter à distance sur le bien-être des collégiens. In : Mathilde Bourrier et Leah Kimber. *Socio-anthropologie, Enquêter à distance : nouvel eldorado*. 2022. N 45. pP. 157-177. ISBN 979-10-351-0791-8. <https://doi.org/10.4000/socio-anthropologie.11434>

MERCIER, Cendrine. 2020. Formation à distance et bien-être des étudiants. *Revue internationale des technologies en pédagogie universitaire*. 2020. Vol 17. Issue 03. Pp. 103-116. <https://doi.org/10.18162/ritpu-2020-v17n3-12>

MERCIER, Cendrine. 2021. Enseignement à distance : Favoriser les interactions de communication sans caméra en classe virtuelle. *Pratiques de la Communication*. Nov 30 2021. N 3. Pp. 1-15. ISSN : 2681-8469. Disponible à l'adresse : <https://pratiquescom.numerev.com/articles/revue-3/2573-enseignement-a-distance-favoriser-les-interactions-de-communication-sans-camera-en-classe-virtuelle>

MERCIER, Cendrine. 2021. Fracture numérique chez les enseignants dans l'hybridation des enseignements à l'Université. *L'expérience, moteur d'innovation pédagogique*. Jan 2021. Vol 1. Disponible à l'adresse : <https://hal.archives-ouvertes.fr/hal-03519921>

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

Aicha El Baaboua / Mariem Ben-Said



NERONI, Joyce & Meijs, Celeste & Gijsselaers, Hieronymus. J. M & Kirschner, A. Paul & de Groot, H. M. Renate. 2019. Learning strategies and academic performance in distance education. *Learning and Individual Differences*. July 2019. Vol 73. Pp. 1–7. <https://doi.org/10.1016/j.lindif.2019.04.007>

NGUYEN, Xuan-An & Pho, Duc-Hoa & Luong, Dinh-Hai & Cao, Xuan-Thuc-Anh. 2021. Vietnamese students' acceptance of using video conferencing tools in distance learning in Covid-19 pandemic. *Turkish Online Journal of Distance Education*. July 2021. Vol 22. Issue 3. Pp. 139-162. ISSN: 1302-6488.

PARK, Inkyung & Oh, Seong Min & Lee, Kyung Hwa & Kim, Soohyun & Jeon, Jeong Eun & Lee, Ha Young & Jeon, Sehyun & Kim, Seog Ju & Lee, Yu Jin. 2020. The Moderating Effect of Sleep Disturbance on the Association of Stress with Impulsivity and Depressed Mood. *Psychiatry Investigation*. March 5 2020. Vol 17. Issue 3. Pp. 243–248. <https://doi.org/10.30773/pi.2019.0181>

PAULES, Catharine. I & Marston, Hilary. D & Fauci, Anthony S. 2020. Coronavirus Infections—More Than Just the Common Cold. *JAMA*. Jan 2020. Vol 323. Pp. 707–708. <https://doi.org/10.1001/jama.2020.0757>

PEERI, Noah. C & Shrestha, Nistha & Rahman, Siddikur & Zaki, Rafdzah & Tan, Zhengqi & Bibi, Saana & Baghbanzadeh, Mahdi & Aghamohammadi, Nasrin & Zhang, Wenyi & Haque, Ubydul. 2020. The SARS, MERS and novel coronavirus (COVID-19) epidemics, the newest and biggest global health threats: what lessons have we learned?. *International Journal of Epidemiology*. Feb 2020. Vol 49. Issue 3. Pp.717-726. <https://doi.org/10.1093/ije/dyaa033>

PETITO, Annamaria & Tudor, Lucian Pop & Leyla, Namazova-Baranova. & Julije, Mestrovic & Luigi, Nigri & Mehmet, Vural & Michele, Sacco & Ida, Giardino & Pietro, Ferrara & Massimo,

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

Aicha El Baaboua / Mariem Ben-Said



Pettoello-Mantovani. 2020. The Burden of Depression in Adolescents and the Importance of Early Recognition. *The Journal of Pediatrics*. March 2020. Vol 218. Pp. 265-267. <https://doi.org/10.1016/j.jpeds.2019.12.003>

RICHARDS, Anne & Jennifer, C. Kanady & Thomas, C. Neylan. 2019. Sleep disturbance in PTSD and other anxiety-related disorders: an updated review of clinical features, physiological characteristics, and psychological and neurobiological mechanisms. *Neuropsychopharmacology Reviews*. Aug 2019. Vol 45. Pp. 55–73. <https://doi.org/10.1038/s41386-019-0486-5>

ROY, Deblina & Sarvodaya, Tripathy & Sujita, Kumar Kar & Nivedita, Sharma & Sudhir, KumarVerma & Vikas Kaushal. 2020. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian Journal of Psychiatry*. June 2020. Vol 51. 102083. <https://doi.org/10.1016/j.ajp.2020.102083>

SHEREEN, Muhammad Adnan & Suliman, Khan & Abeer, Kazmi & Nadia, Bashir & Rabeea, Siddique. 2020. COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses. *Journal of Advanced Research*. July 2020. Vol 24. Pp. 91-98. <https://doi.org/10.1016/j.jare.2020.03.005>

TOMLINSON, Jo & Tim, Shaw & Ana, Munro & Ros, Johnson & Madden, D. Lynne & Rosemary, Phillips & Deborah, McGregor. 2013. How does tele-learning compare with other forms of education delivery? A systematic review of tele-learning educational outcomes for health professionals. *New South Wales Public Health Bulletin*. Nov 7 2013. Vol 24. Issue 2. Pp. 70-75. <https://doi.org/10.1071/NB12076>

TOUSSAINT, Emmanuelle & Agnès, Florin & Jean-Michel, Galharret & Cendrine, Mercier & Omar, Zanna. 2022. Inquiétude

**Impact of COVID-19 pandemic on psychological status
and distance learning among Moroccan students: a
survey study**

Aicha El Baaboua / Mariem Ben-Said



suscitée par la Covid-19 et soutien perçu par les enfants et les adolescents durant la pandémie en France. *Enfance*. N 4. Pp. 435-454. <https://www.cairn.info/revue-enfance-2022-4-page-435.htm>

VAN, Dao Thi Hong & THI, Ha Hoang Quoc. 2021. Student barriers to prospects of online learning in Vietnam in the context of Covid-19 pandemic. *Turkish Online Journal of Distance Education*. July 2021. Vol 22. Issue 3. Pp. 110-123. <https://doi.org/10.17718/tojde.961824>

WHO. 2020. *Naming the coronavirus disease (COVID-19) and the virus that causes it*. Retrieved April 29, 2020. Available at the address: [https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-\(covid-2019\)-and-the-virus-that-causes-it](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it)

XIANG, Yu-Tao & Yuan, Yang & Wen, Li & Ling, Zhang & Qinge, Zhang & Teris, Cheung & Chee, H Ng. 2020. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry*. Feb 4 2020. Vol 7. Issue 3. Pp. 228-229. [https://doi.org/10.1016/S2215-0366\(20\)30046-8](https://doi.org/10.1016/S2215-0366(20)30046-8)

YÜZBASIOGLU, Bozdemir Hafife & Yüzbasioğlu, Mustafa Kemal & Kurnaz, Mehmet Altan. 2021. Prospective Classroom Teachers' Views on Out-of-School Learning Activities Before and During the Covid-19 Outbreak. *Journal of Turkish Science Education*. 2021. Vol 18. Covid-19 Special Issue. Pp. 91-107. ISSN: 1304-6020. <https://doi.org/10.36681/tused.2021.74>

ZANDIFAR, Atefeh & Badrfam, Rahim. 2020. Iranian mental health during the COVID-19 epidemic. *Asian Journal of Psychiatry*. June 2020. Vol 51. Issue 101990. doi: 10.1016/j.ajp.2020.101990