Evaluating The Challenges That Nursing Students Faced With E- Learning During Covid-19 Pandemic

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KEYWORDS	ABSTRACT
Nursing students, Covid-19, anxiety, e-learning	**Introduction:** Higher education institutions have been extremely affected by the Covid-19 pandemic. E-learning was the option used during lockdown in Albania and all around the world. Students were obligated to interrupt face to face education and clinical practice. This situation put the academic institutions in difficulty because both lecturers, students and other members of university institutions have to face a new way of teaching and learning. The aim of this study is to evaluate the challenges that nursing students faced during online learning because of lockdown and offer solution to improve this way of teaching and learning. **Methods:** This is a cross-sectional study. The study was conducted at Faculty of Technical Medical Science, Tirana. Subjects: the population study were students of the third and fourth year of bachelor degree, master of science and professional master. They took part by voluntary way. Participants completed a self -administrated questionnaires. In this questionnaire there were questions related the efficiency of e-learning and problems related with it. **Results:** The highest percentage of students presented problems with the Internet during the study period; 40.1% of them did not agree to online learning; high percentage of results related to the inappropriateness of the online semester methodology; 46% of the interviewers do not believe in the continuation of online learning. Regarding the health problems, the students presented the highest percentage of headaches and stress. A significant association between gender, study field and stress level with p=0.000, p=0.002. The results are reported using descriptive statistics with counts and absolute percentages. A chi-square test was used to establish associations between variables. A p value < 0.05 was considered significant. Statistical analysis was performed using the SPSS 20.0 statistical package. **Conclusions:** Students showed no preference for distance learning versus face to face. Teachers should take appropriate steps to enhance e-teaching to improve it.

1. Introduction

SARS- CoV-2 Virus is the virus which caused corona virus illness (Covid-19). It is a contagious disease which is declared as pandemic by World Health Organization on March 11, 2020, with the first cases at Wuhan in December of 2019 and after that most countries entered into crisis [1,2] due to this situation.

This pandemic caused many problems, not only in people's health resulting in high fatality rate but also in economy, politics and all aspects of social life [3,4,5]. But the biggest challenges were for medical staff especially for nurses who are always on front line in any situation [6]. Thus, they would have to adapt their interventions and patients care in this new and unfamiliar situation at the beginning of pandemic.

This situation interfered also in education system [7], leading to closure of universities and academic institutions including nursing faculties to reduce the risk of infection transmission.

Due to the lockdown because of Covid-19, a decision taken by the government, all students were obligated to interrupt face to face learning and clinical practice and continue their studies on online platforms from home [8,9] resulting in a decline in social involvement and increase in loneliness [10].

This was uncertain situation for both nursing educator and nursing students because there was no certainty if the program´s objectives set at the beginning of the academic year would be met, leading

in a significant impact on education.

Online learning is actually not an unknown practice. In fact, according to David Taylor et al. 2020, it is not the first time that distance learning has been suggested as a response to such challenges [11]. But, pandemic showed us that it's time to start changing and strengthening approaches for new way of teaching and learning. Online learning is becoming very important part of the educational system, helped a lot by the development of technology. Bearing in mind that online learning requires many elements such as: computers, internet connection but also lecturers and students who know how to use it, to function as it should. Following this, it is understandable that developed countries have more opportunities for online learning to be more successful compared to developing countries or low-income countries [12,13].

Several studies have been conducted regarding positive and negative aspects of using online platforms for learning especially among medical students [14,15,16]. They list benefits in terms of money saved, more time spent with family and travel time saved during e-learning while the most frequent negative effects are especially for clinical practice as well as the anxiety generated during this period of time [17,18,19,20].

In our knowledge, using e-learning in nursing faculty is a new method of teaching for Albania. Before pandemic, the technology was used during lessons by showing videos, photos or different procedures on face to face learning. Due to this fact, in our study we seek to assess the challenges that nursing students faced during online learning and offer solutions to improve this way of teaching and learning.

2. Methodology

Study type

This is a descriptive cross-sectional study that was conducted during April- May 2023 at the Faculty of Technical Medical Science. Participants were nursing, physiotherapy, laboratory technician and imaging technician students

Study population

The participants of the study included third-year undergraduate students and first-year students of professional master' and master of science who participated voluntarily in the survey.

The total number of respondents was 278. The inclusion criterion: was all the students who have taken online lessons during the lockdown period in the pandemic. The exclusion criteria: were students who did not want to participate in this study and those who did not take online lessons.

Study tools

To collect data, we used a self- administered structured questionnaire. It was developed from the review of different literature and adapted for our country [21,22]. The questionnaire is divided into sections: Part I includes questions dedicated to demographic characteristics like as age, gender, residence, academic year, place of online learning, employment, marital status, and devices for e-learning. Part II includes questions about students' attitudes towards e-learning. Questions are adapted from relevant literature [23].

Statistical analysis

The results are reported using descriptive statistics with absolute counts and percentages. A chi-square test was used to establish associations between age groups with years of study; with field study and health problems. A p-value < 0.05 was considered significant. Statistical analysis was performed using the SPSS 20.0 statistical package.

Ethics statement

To collect the study data, written approval was obtained from the Dean and Internal Review Board (Protocol Number: 2023/678) of Technical Medical Science Faculty, Tirana, Albania. An informed

consent to explain the aim of the study was placed on the top of the questionnaire to be read and approved by participants.

3. Results and Discussion

Socio-demographic characteristics of the population under investigation 278 students consented to participate in our survey and completed the questionnaire. The most dominant age group was 21-25 years old (70.50%) and the majority of those taking part were female (87.10%). Almost three-quarters of participants (80.20%) were students at the bachelor level and the others at professional and science master. 222 (79.90%) of respondents were in the third year of studies while the most dominant study field was nurse (83.80%). The vast majority of the respondents lived in urban areas (80.90%) (Table 1).

Table 1. Demographic characteristics of the study participants (n=278)

Parameter	Percent of Responses (n)
Age Group	
<=20	26.60% (74)
21-25	70.50% (196)
26-30	2.90% (8)
>=30	0.00% (0)
Gender	
Female	87.10% (242)
Male	12.90% (36)
Study	
Bachelor	80.20% (223)
Professional Master	18.70% (52)
Scientific Master	1.10% (3)
Academic Study Year	
The Third Year	79.90% (222)
The Fourth Year	20.10% (56)
Study Field	
Nurse	83.80% (233)
Physiotherapy	8.30% (23)
Laboratory Technician	5.40% (15)
Speech Therapist	2.50% (7)
Residence	
Urban	80.90% (225)
Rural	19.10% (53)

[21,22,23]

Student's experience with E-learning tools and Internet access

In addition to the demographic characteristics of the study population, the researchers were interested in knowing how online learning has functioned. Therefore, a group of related questions are presented in the table below. Most of the students have used a laptop (41.70%) as a device during the pandemic for e-learning but also, a significant number of students have used Smartphone (39.60%) and the opportunity it offers to attend in online classes. Students reported that they had problems with the internet (86.00%) and more than half of the study population have had problems with the devices. The most used platform for e-learning during pandemic was the classroom platform (60.80%).

But to the most important questions of this section, most of the students were skeptical and not very satisfied. So, 41.40 of respondents didn't agree with online learning and exams conducted through this platform. 35.60% of the students didn't agree with the methodology chosen by the faculty. Even more, 46.00% of them don't believe that distance learning should continue. But what is most important is that students believe that some competencies cannot be achieved (46.40%) (Table 2).

Table 2. Student's experience with E-learning tools during Covid-19 pandemic

Particulars/Items	Percent of Responses (n)
Which devices did you utilize during online learning?	
Desktop computer	16.50% (46)
Laptop	41.70% (116)
Smartphone	39.60% (110)
Tablet	2.20% (6)
During online course, did you have internet access at home?	
Yes	90.30% (251)
No	9.70% (27)
Have you had internet problems during online lessons?	
Yes	86.00% (239)
No	14.00% (39)
Did you experience any problems with your devices used for online learning?	
Yes	66.90% (186)
No	33.10% (92)
Which platform was utilized during online learning in pandemic?	
Classroom	60.80% (169)
Zoom	13.30% (37)
Other	25.90% (72)
Do you agree with online learning and exams?	
Absolutely yes	9.00% (25)
Yes	33.50% (93)
No	41.40% (11)
Absolutely not	16.20% (45)
Do you think the online learning methodology was appropriate?	
Absolutely yes	9.70% (27)
Yes	46.40% (129)
No	35.60% (99)
Absolutely not	8.30% (23)
Do you believe that online learning cannot provide certain competencies?	
Absolutely yes	36.00% (100)
Yes	46.40% (129)
No	11.20% (31)
Absolutely not	6.50% (18)
Do you believe that distance learning should continue?	
Absolutely yes	10.80% (30)
Yes	10.40% (29)
No	46.00% (128)
Absolutely not	32.70% (91)

[21,22,23]

Health problems experienced during pandemic

During lockdown as a consequence of Covid-19 pandemic and online learning that took place at this time, most of the students reported experiencing several health problems. 75.50% of study population have experienced headache and eyes irritation. They show that they have been stressed (49.60 %) and even more 46.00% have experienced moderate stress because of online learning (Table 3)

Table 3. Health problems

Particulars/Items	Percent of Responses (n)
Did you experience headache and eye irritation?	
Yes	75.50% (210)
No	6.10% (17)
Somehow	18.30% (51)
Did you experience stress because of online learning?	
Yes	49.60% (138)
No	10.80% (30)

Somehow	39.60% (110)
How stressful was the experience of online learning?	
Very minimal stress	12.60% (35)
Minimal stress	24.80% (69)
Moderate stress	46.00% (128)
High stress level	16.50% (46)

[21,22,23]

Experience of Nursing Students with E-learning during pandemic

According to the group questions, in the questionnaire, regarding the satisfaction of students during online, we notice that 78.80 % (219) of the students don't agree with online learning and prefer face to face learning. 72.70 % showed that they had good communication with teachers but only 36% of them said they received answers from lecturers for their questions during online lessons.

77.30% of respondents indicate that there were cases when they did not want to be part of online learning even when they did not have problems with the internet. For some questions like as: motivation to study during online lessons, and perform better because of more study time available due to lockdown, the respondents negatively answered with a percentage which ranged 52.90%, 46.40% respectively.

For the question, how comfortable they felt during electronic communication in pandemic, 50.70% of the students answered somehow and only 23.40% were satisfied.

The majority of students (76.30%) indicated that online study reduced economic costs. Moreover, 47.80% (133) out of 278 respondents, believe that online learning is not an effective way to complete studies and 60.40% (168) of them felt that professional knowledge and practices achieved from online learning were deficient (Table 4).

Table 4. Evaluation of the factors influencing how students view online learning

Particulars/Items	Yes	No	Sometimes
During the online lessons, did you and the teacher have good communication?	72.70% (202)	27.30% (76)	-
Have there ever been situations in which you refused to take part in online learning even in the absence of internet connection?	77.30% (215)	22.70% (63)	-
Did you get the chance to obtain the materials and information that teachers sent even if you participated in online learning?	79.90% (222)	20.10% (56)	-
Did you get an answer from the teacher when you needed to ask questions during online lessons?	36.00% (100)	14.40% (40)	49.60% (138)
Did you feel comfortable when communicating electronically during online in the pandemic?	23.40% (65)	25.90% (72)	50.70% (141)
Is there a difference between online learning and face-to-face learning?	83.10% (231)	6.50% (18)	10.40% (29)
Do you believe that online learning can be an effective way to finish the studies?	21.60% (60)	47.80% (133)	30.60% (85)
Do you think that face-to-face learning is the better way to learn?	78.80% (219)	9.00% (25)	12.20% (34)
Did you perform better because you had more time to study due to online learning?	27.70% (63)	46.40% (129)	30.90% (86)
Since you didn't have to spend time attending college, does online learning allow you to spend your time more effectively?	25.90% (72)	33.80% (94)	40.30% (112)
Did the cost of food, room rent, and transportation to college decrease as a result of online learning?	76.30% (212)	9.70% (27)	14.00% (39)
Have you felt that professional knowledge and practices achieved from online learning were deficient?	60.40% (168)	9.70% (27)	29.90% (83)
Did internet network problems arise during online learning?	69.40% (193)	8.30% (23)	22.30% (62)
Did you find online studying motivating during the pandemic?	18.30% (51)	52.90% (147)	28.80% (80)

[21,22,23]

Evaluation of the variables influencing how e-learning is perceived

Bivariate analysis was done to establish associations between the age-group with year of study, gender, profession and level of stress of the sample population. Only the statistically significant associations (p-value < 0.05) are reported (see table 5).

Table 5: Correlation between Year of Study, Gender, Study Field, Level of Stress during Online Learning, and Age Group

Variables	<=20	21-25	26-30	P-value
Year of Study				
- Third year	74	149	0	.000
- Fourth year	0	47	8	
Gender				
- Female	69	169	4	.002
- Male	5	27	4	
Study Field				
- Nurse	69	160	4	.000
- Physiotherapist	2	17	4	
- Laboratory technician	3	12	0	
- Speech therapist	0	7	0	
Level of Stress				
- Very minimal stress	3	29	3	.003
- Minimal stress	2	56	1	
- Moderate stress	46	78	4	
- High stress level	13	33	0	

[21,22,23]

Table 6 shows the associations between level of stress with gender and the reason for the impossibility of using the. Only the statistically significant associations (p-value < 0.05) are reported.

Tabel 6. Correlation between level of stress during online learning me problems with the devices they used for online learning and gender

Variables	Very Minimal Stress	Minimal Stress	Moderate Stress	High Level of Stress	P-value
Yes	20	40	87	39	.013
No	15	29	41	7	
Female	27	54	117	44	.005
Male	8	15	11	2	
High cost of internet	23	34	39	20	.005
Weak internet signal	12	33	89	26	
I'm not sure how to use it	0	2	0	0	

[21,22,23]

Education, business, healthcare, and finance are just a few fields that have improved as a result of the advancement of technology information (IT). Because of this, the field of education has expanded quickly and encouraged the use of e-learning, which is thought to be an effective learning tool and is the direct outcome of integrating education and technology [24]. To maximize the effectiveness of these systems, a significant amount of research has been conducted regarding the quality of e-learning systems, and numerous researchers have tried to identify e-learning success qualities [24,25, 26].
Therefore, in our study we seek to assess the challenges that nursing students faced during online learning because of lockdown and offer solutions to improve this way of teaching and learning

Before discussing the results related to the new teaching and learning experience or the perception that the students had about e-learning or health problems during this period of time, let's discuss a few findings from the demographic data. So, from the results, we notice that the majority of the respondents are third -year bachelor students. More than half of the students belong to the age group of 21-25 years old. The participants were predominantly female (87.10%), from urban areas (80.90%) and study field was nursing (83.80%).

Our students are not the only ones who have not attended before online classes, similar finding is in the study [27], just as there are also studies that show the attendance of online classes before pandemic [28].

Regarding student's experience with E-learning tools during Covid-19 pandemic, all of them owned devices for online learning. Laptops and smart phones were the most used devices with a similar proportion among nursing students. This is probably also due to the fact that they are easy to carry and access [29]. Also, in a systematic literature review conducted by Inmaculada Garcia-Martinez et al., students preferred to use mobile device for their online classes because the allowed student-teacher connection considerably simpler than with other types of gadgets [30]. 90.30% had internet access at home as we find in previous studies where the students used it more [31]. Although more than half of the respondents (66.90%) did not have a problem with devices, they were not satisfied with online learning (57.6%) and 78.7% think that e-learning should not continue after the pandemic. A negative impact of e-learning we also found in Sahar Abbasi et al. study in which participated 382 students,77% had a negative perception for e- learning [32].

In our study, we also found problems such as headache and eyes irritation or moderate stress with percentages respectively 75.50%, 46%. Such health problems as well as others are found in other studies as a result of exposure to a long time in front of screens [33,34]. Results from a Spanish study indicate that college students who experience moderate to extremely severe stress during lockdown have a stronger psychological impact [35].

Our nursing students in this survey revealed that they had a good interaction with teachers, 50.70% of them sometimes felt comfortable communicating electronically. Even though they haven't had problems with the chosen platform during online classes, they still think that online learning is not a good solution for their profession. Thus, more than three-fourths of the respondents (83.10%) believe there is a big difference between online learning and face to face. Just as, 78.80% think that face to face learning is the better way to learn. This finding is also supported by another research [31].

Another important component that we noticed was a significant correlation between respondents' gender and stress levels. Women are more likely than men to experience moderate to high levels of stress. Timon Elmer et al. in their study showed that female students appeared to be at higher risk of facing negative mental health [36]. Other research undertaken in China and Switzerland has revealed that female respondents exhibit significantly higher levels of psychological distress. Additionally, female gender has been found to be under the strong influence of stress, and those are more severely impacted during times of crisis than male students [37,38]. Another significant correlation between moderate stress and internet connectivity was found. Thus, 160 nursing students have experience from minimal stress to very high level stress due to weak internet signal. Approximately a similar finding we found in a research conducted by Suraksha Subedi et al. where it showed that, out of 1012 respondents students and 104 teachers, 63.3 % experienced internet problems [39] becoming a critical factor that affects e-learning [40] and also mental health. On the other hand, the research and students responses have also demonstrated that financial economy is evident in the amount of money saved on transportation or room rent. At the same time, the time saved by not traveling is spent with [41].

At the end, we can confirm that our students experienced anxiety about participating in fully online classes by comparing those with results of Hamilton et al. (2016) from USA who found that students were comfortable using online learning for academic purposes and that they preferred blended courses over fully online because they allowed time for in-class, active, and team-based activities [42,43].

4. Conclusion and future scope

Teaching and learning practices have unquestionably changed as a result of the introduction of e-learning tools in higher education and several elements determine whether e-learning is successful or not. Teaching methodologies through e-learning require re-evaluation and adaptation. Both academically and personally, strategies for coping with the increasing demands imposed by e-learning appear to be an important area for exploration. Students disliked online classes because they felt that their profession requires clinical practice and being face to face with patients, which could not be achieved through technology. Also, students' lack of desire to be part of online learning may be due to their dissatisfaction with the platform used, quality of online course or the lack of interaction with others, leading to boredom and low motivation to learn [44]. Our research found that online classes has generated high level stress among students.

For this reason, educational and health policies related to students' mental health can be developed using the study's results. Therefore, it is important to promote various methods of coping in order to support students' mental health during a pandemic. For the purpose of giving students the support they require while taking online lessons, lecturers must plan regular online advising session.

Technical skills training in future should be given to both faculty and students in order to improve students' proficiency in applied skills and eliminate communication barriers based on poor skills.

So, teachers must take appropriate steps to improve e-learning and to meet the expectations of nursing students [44].

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