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Digital Learning During Covid 19 Pandemic and the Perception of Health Students in North Cyprus, Qatar and Pakistan

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ABSTRACT

Introduction: Despite the advancements in health, the 21st century could not stop the advent of a new infectious disease that started in Wuhan, China in December 2019. On March 11, 2020, the World Health Organization declared COVID 19 outbreak as a pandemic. To prevent the spread of disease, the lockdown was implemented in various forms around the globe. The educational institutions were also closed and this opened a new era of digitalization in education, a change that was sudden for the teachers as well as the students.

Objective: This particular study was carried out in the prevailing pandemic situation to learn the perspective of health students towards this abrupt change to digitalization.

Methods: A total of 400 students studying in health faculties were enrolled in the study from the Turkish Republic of Northern Cyprus (TRNC), Qatar, and Pakistan using a convenient sampling method. A self-structured questionnaire was used.

Results: The results showed that the students in Qatar had easy access to the internet in contrast to the students in Pakistan and TRNC. The students in Pakistan faced difficulties during online learning sessions due to poor infrastructure. The students in all three countries believed that face to face contact with the course instructor is necessary.

Conclusion: Students from all three countries hold the opinion that online learning is not the replacement of face to face learning. Planning needs to be done and implemented to ensure effective delivery of education during the months to come in face of the current pandemic.

Key Words: COVID 19, Online Education, Face to face learning, Health faculty students, Pandemic

INTRODUCTION

History is full of records of intermittent outbreaks of infectious diseases that left long-lasting impacts on human societies, the economic development of the countries, and their social development. Diseases like cholera, bubonic plague, smallpox, HIV, swine flu and influenza, etc. led to a great number of casualties and were not confined to one region.[1] Despite the advancements in science and technology and health-related fields, the 21st century could not stop the advent of a new infectious disease that started in Wuhan, Hubei province China in December 2019 and soon spread to the rest of the world. On February 12, 2020, the disease was officially named Coronavirus Disease 2019 (COVID 19) by the World Health Organization.[2] On March 11, 2020, the World Health Organization declared COVID 19 outbreak as a pandemic.[3] In an attempt to contain the disease, nationwide lockdowns were implemented in many parts of the world that affected almost all walks of life and educational institutions were not an exception. In the Turkish Republic of Northern Cyprus, educational institutions were shut down on 10 March 2020, by the authorities for a week, but then it lingered on for months.[4] In Qatar, the ministry of education closed schools and universities on March 10, 2020, to prevent the wild increase in the number of COVID 19 cases.[5] In Pakistan, on March 13, 2020, the educational institutions were shut down by the concerned authorities,[3] and likewise in the rest of the world, either complete or localized lockdowns were implemented to reduce the social contact among people and thereby minimize the spread of the disease. Glob-

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ally 1.2 million children suffered due to the lockdown of educational institutions.[6] The students who were to leave the college, and the university graduates of 2020 suffered the worst blow of the pandemic as they are facing an interruption in their routine education practices and are bearing the stress of being launched in the job market during the times of worst recession.[7]

To minimize the adverse impacts of disruption of education, the educational authorities, the world over decided to take advantage of flourishing innovative technologies and learning management systems both for teaching the course works and assessment of students. The policymakers in the education sector availed this opportunity to implement the use of information technology during the quarantine days to minimize student losses. Various distance learning tools were utilized in various parts of the world. The developing and underdeveloped countries with limited resources and insufficient infrastructure relied more on using radio and television for delivering course content to the students as part of their distance learning programs. In developed countries, online education was preferred for delivering subject material.[7] Many major software companies like Microsoft, Google, Zoom, and Slack offered free features of their products during these crisis learning times.[8]

The transition from the traditional in-class education to current distance crisis learning took various forms such as Knowledgebase; Online support; Asynchronous; Synchronous; Hybrid.[8] Distance learning has its pros and cons. The greatest advantage of being staying safe at home, bringing education to the doorsteps of students, better convenience, easy access to resources, reduced cost, and a better environment. At the same time, this distance learning has a drawback because of the exhaustive needs of resources,[9] lack of good quality internet connection, unavailability of laptops and computers in each household, inadequate digital skills of students, uneducated or under-qualified parents, long-scheduled electricity cutdowns, inability to satisfy practical aspects of curriculum etc.[10] Another challenge for digitalized education is the untrained or undertrained staff, not adapted to the new teaching methodology,[10] as many academic staff members lack adequate information and computer technology (ICT) skills. Keeping in view the needs of health students this study aimed at:

1. Studying the difference in perceptions of health faculty students towards online learning based on their age, gender, the country of residence.
2. Keeping in view the shortcomings, plan for the upcoming semesters to bring improvement if the current COVID-19 situation prevails in the coming months.

MATERIAL AND METHOD

Research Design and Study Participants

A self-structured questionnaire was designed comprising of 19 questions in total, 7 questions addressed the sociodemographic characteristics of the students while 12 questions focused on various aspects of online learning that were believed to have an impact on student's learning, using a 5-point Likert scale. The ethical committee of Cyprus Science University was contacted for approval to conduct the study and the same was granted on June 29, 2020, in the Institute Ethics Committee meeting, under clearance number 15. A pilot study was carried with 30 students enrolled in undergraduate and postgraduate programs in the Faculty of Health Sciences, 10 from each country. Based on their feedback alterations were made to the questionnaire.

400 university students enrolled in the health faculties in universities of Qatar, TRNC and Pakistan were contacted using an online survey platform employing a convenient sampling technique. As is the problem with the online surveys, we also were not able to get all the feedback. A total of 315 filled surveys were received and in the final statistical analysis 261 participants were included as their responses did not have any missing values.

FINDINGS

Firstly, the descriptive statistical analysis of the first 7 survey questions was carried out on the sample of 261 students and the results are as in Table 1.

Table 1: Descriptive statistics of 261 study participants

Variable	N (%)
Gender	
Female	169/261 (64.8)
Male	91/261 (35.2)
First language	
Arabic	99/261 (37.9)
English	65/261 (24.9)
Urdu	97/261 (37.2)
Age group	
18-22	189/261 (72.4)
23-27	45/261 (17.2)
28-32	11/261 (6.1)
Country	
TRNC	57/261 (21.8)
Qatar	103/261 (39.5)
Pakistan	101/261 (38.7)

Table 1: *(Continued)*

Variable	N (%)
Program studied	
2 years program	10/261 (3.8)
Undergraduate	216/261 (82.8)
Postgraduate	25/261 (9.6)
Doctoral	10/261 (3.8)
Variable	Median (Q1-Q3)
Number of online courses studied	3 (2-5)
Total number of hours spent each week	10 (6-15)

For each continuous variable in the study Kolmogorov-Smirnov and Shapiro-Wilk normality tests were carried out and it was observed that the continuous variables under question were not normally distributed. Thus, in our study, median (quartile 1 and quartile 3) values were calculated for continuous variables as well as categorical variables frequencies, and the corresponding percentage values were stated.

The inferential statistical analysis for each of the 12 questions was done and we observed that there is a statistically significant difference for the gender groups, the age groups and the current country of residence. Later on, we performed collinearity analysis to find out if there is collinearity between the student perception scores. Collinearity analysis results revealed that there is no collinearity between the 12 questions addressing student perception. An overall median score was calculated to measure the overall student perception and then compared with the genders of the participants, their age groups, and the country where they were residing. Since the median student perception scores were compared with the individual groups, an independent median test was employed to measure their significance. A p-value of less than 0.05 was to be considered as a statistically significant difference.

The gender difference and its effect on online education were studied. To date, most of the studies carried out to study the impact of the COVID 19 pandemic on education has not included gender[11]. Keeping this fact in mind we wanted to make a comparison of gender and online education. The results showed that the perceptions of male and female students towards online education are not statistically significant irrespective of their country of residence.

When a comparison was made of the age of the student with their perception of online education, we noticed that there is a statistically significant difference between the age groups, more so with regards to certain questions. The results showed that those who were 33 years of age or above were of the view that they were able to work easily with their class fellows as a group using the internet (p=0.049), didn't find in-class learning different from online learning (p=0.002), and this new experience of online learning was more exciting for them in contrast to the traditional in-class learning (p=0.009).

When we compared the student's perception towards online education with their residing countries it was found that there is a statistically significant difference in the overall median score regarding the perception of students towards online education, as shown in Table 2.

Table 2: Comparing each and overall student perception score with their residing country at the time of the study

	TRNC	QATAR	PAKISTAN	p-value
I have easy access to internet for my lectures	2 (2-2)	1 (1-2)	2 (2-4)	<0.001*
I can easily communicate electronically using online programs advised by my university	2 (2-2)	2 (1-2)	2 (2-3)	0.001*
I can actively communicate with my course instructors and course fellows	2 (2-2.5)	2 (1-3)	2 (2-3)	0.095
I can effectively manage my study time and able to complete my assignments on time	2 (2-2)	2 (1-3)	3 (2-4)	<0.001*
I possess sufficient knowledge of using online platforms	2 (2-3)	2 (1-3)	2 (2-3)	0.067
I can easily access my teachers other than the class timings and receive timely responses from them	2 (2-3)	3 (2-4)	3 (2-3)	0.033*
I believe that face to face contact with the course instructor is necessary	2 (1-3)	2 (1-3)	2 (1-3)	0.667
I feel comfortable communicating online	2 (2-3)	2 (2-3)	3 (2-4)	0.453
I can work easily with my class fellows as a group	2 (2-3)	2 (2-4)	3 (2-3)	0.028*
I don't see any difference between in-class learning and online learning	4 (3-4)	4 (3-5)	4 (3-5)	0.010*

Table 2: ***(Continued)***

	TRNC	QATAR	PAKISTAN	p-value
I find online learning more motivating than traditional in-class learning	4 (3-4)	4 (3-5)	4 (3-5)	0.064
I believe all of my courses can be delivered effectively via the internet	3 (2-4)	4 (2-5)	4 (3-5)	0.306
Overall Median Score (Q8-Q19)	2 (2-3)	2 (2-3)	4 (3-5)	0.017*

When the student perception scores were analyzed for each question, it was observed that students in Qatar strongly agreed that they have easy access to the internet for their online classes and assignments in contrast to the students in TRNC and Pakistan ($p<0.001$). Also, the students in Qatar agreed that they were able to communicate easily using online programs advised by their universities ($p=0.001$), effectively managing their study time, and were completing their assignments in time ($p<0.001$) as opposed to those students who were in TRNC and Pakistan. These results are quite understandable as Qatar is a developing country with a high-income level and the student residing there has better access to the high-speed internet, laptops, and other facilities needed for smooth delivery of education. In contrast to Qatar, the students in Pakistan and TRNC are deprived of these facilities because of the lack of essential infrastructure necessary for digitalized learning. Also, the students in TRNC are mostly international students coming from a war struck Arab countries or African continent belonging to poor economies so they lack the resources to buy laptops and tablets and rely mostly on the facilities in the university libraries. In this period of lockdown, the lack of access to libraries and computers was another shortcoming which hindered their efficient utilization of online classes. Yet despite these hurdles, students in TRNC said that they were able to easily access their teachers other than the class timings and got timely responses from them ($p=0.033$) in contrast to students in Qatar and Pakistan. Students in Pakistan found it more difficult to work online with their class fellows as a group when compared to students in TRNC and Qatar ($p=0.028$). One finding which is commonly observed for all the health faculty students from the said three counties is that all of them were of the view that there is a difference between in-class learning and online learning, students in Qatar and Pakistan agreed more than students in TRNC ($p=0.010$).

DISCUSSION

The COVID-19 pandemic created a worldwide emergency in the society demanding great efforts to put a stop to the rapid spread.[12] The difficulties experienced by the students in Pakistan when using the advised online programs coincide with a study carried out in a private university in Pakistan where it was observed that competency in the English language is a hurdle in delivering online education. One reason can be that software programs used for e-learning are in English and this makes it difficult for them to comprehend the program and use it effectively.[13] Students from Qatar and TRNC said that they were able to manage their study time successfully and were able to complete their assignments in time in contrast to the Urdu language speakers ($p<0.001$). One reason can be language and the other can be the poor infrastructure of Pakistan which gives students poor access to the internet and to make the situation worse the long-scheduled and unscheduled electricity cuts make it difficult for the students to complete their assigned tasks in the due time. As revealed in a blog of UNICEF and shown in Figure 2 below it was observed that only 26% of students in Punjab province in the age range of 5-17 had internet access.

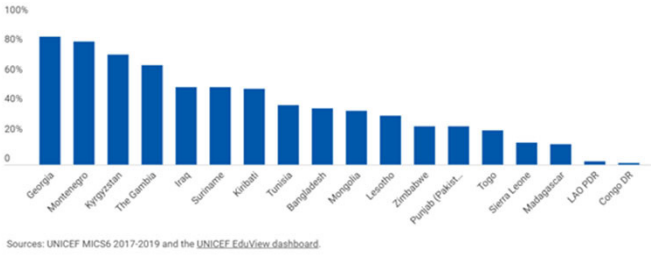

Figure 1: Global monitoring of school closures caused by COVID 19 (Adapted from https://blogs.unicef.org/evidence-for-action/remote-learning-global-pandemic-insights-mics6/)

When we made a comparison of age and perception of online education, our results were similar to the results of a study carried out in 2014, which also revealed that students in the older age groups prefer to opt for online learning rather than conventional learning.[14] This abrupt transition in the education sector from traditional face to face learning to online learning is a change for which neither the lecturers nor the students are well prepared, but one thing is for sure that this change is to stay in the years to come and will open new avenues of digitalization in the years ahead. Keeping the resource restrictions and other barriers in mind the best available solutions were offered by various educational institutions. These solutions have sufficed the basic needs but were unable to fulfil all the requirements, especially for the healthcare courses. This particular study highlighted issues that reduce the efficacy of online education like poor internet

access in TRNC and Pakistan, inability to work efficiently with the course mates for group assignments particularly in Pakistan, delayed responses from the course instructors in Pakistan and Qatar.

CONCLUSION

With the pandemic still prevailing all over the world, this E-learning is to exist in the coming months. To make it work efficiently in the days ahead, we need to focus on the shortcomings in infrastructure and put in our best to overcome the challenges. This can be done by improving the technical competencies of lecturers and students, reducing the limitations in communication, improved time management by instructors, providing flexible timings and student-friendly software programs.

The lecturers also need to keep in mind that the students are having difficulties in pursuing their education as well as in their social lives. This puts an extra load on the course instructors to provide their students with the needed social, psychological, and moral support. One major handicap with the health department courses is the lack of patient interaction. With the progressing semesters, most of the health courses demand patient history taking and handling which to their fullest cannot be achieved but at least with the available simulation software programs some gaps can be filled. There is a need to come up with solutions for such shortcomings if students in the undergraduate health programs are to maximally benefit from online classes.[9]

In the Eleventh Annual Conference of the Sir Arthur Lewis Institute of Social and Economic Studies, it was stated "Education is no longer an option; it is the prescription for economic survival".[15] The Covid-19 pandemic is a reinforcement of this statement.

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