

IMPACT OF COVID 19 PANDEMIC ON MEDICAL STUDENTS EDUCATION A MULTICENTRE QUANTITATIVE STUDY.

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ABSTRACT

Objective: To provide an overview of the situation experienced by medical students during the COVID-19 pandemic, and To investigate the perceptions and impact of online teaching on medical students education in COVID 19 pandemic.

Design: A six months cross sectional online learning, multicenter quantitative study .

Methods: This study was conducted by the investigators through an online and paper based questionnaire distributed to medical students of two medical universities through E mails, face book and whatsapp groups. A total of 500 students participated in this study. The questionnaire consisted of 5 parts. The data were analyzed with the Statistic-a 13.3 (Stat Soft, Inc., Tulsa, OK) statistical software.

Results: The characteristics of the medical students are explained and among the 500 students, (29%) were males and (71%) were females. The age of the students ranged from 19 to 24 years (M = 22.66, SD = 2.15). A total of 60% students had previous experience with e-learning, whereas 40% had no experience. A total of (56%) respondents described their IT skills as good, (42%) as moderate, and (2%) as poor.

The most frequent advantages of e-learning chosen by respondents were the ability to stay at home (69%), continuous access to online materials (69%), the opportunity to learn at your own pace (64%), and comfortable surroundings (54%). The majority of respondents in their 4th and 5th year of study more often chose lack of interactions with patients (70%) (p< .001) and technical problems in the first 3 years of studies with IT equipment (54%)(p = .003) as the main disadvantages and lack of self-discipline (P < .001), and social isolation (P = .008) as e-learning disadvantages.

There was no statistical difference between face-to face (M = 3.23) and online learning (M = 3.27) in terms of opinions on the ability of the learning method to increase knowledge (P = .46). There was no statistical difference between female and male students (p =.46) . E-learning was considered less effective than face-to-face learning in terms of increasing skills (M = 2.03, M = 4.3, respectively) (P < .001) and social competences (M = 2.03, M = 4.2, respectively) (P < .001). Students assessed that they were less active during online classes (M = 2.72) compared with traditional classes (M = 3.82) (P < .001) . A total of (73%) respondents rated e-learning as enjoyable. Of these, (15%) found it extremely enjoyable, (29%) found it very enjoyable, and (28%) found it somewhat enjoyable. A total of (27%) students did not enjoy online learning.

A significant difference was found between time spent on online platforms before and during COVID-19, with 7.35% students before versus 23.56% students during the pandemic spending >15 hours per week (p<0.05).

Conclusion: This study showed that e-learning is a valuable method of teaching medical students. In the opinion of the respondents in our survey, e-learning is effective in increasing knowledge and is highly accepted.

INTRODUCTION

The COVID-19 pandemic has disrupted teaching in a variety of institutions, especially in medical schools.

E-learning is defined as using information technology to improve the quality of education.

Although online education is well recognised and documented as a promising and effective mode for teaching undergraduate medical and nursing students , it was a different story to conduct fully online courses during the COVID-19 crisis, as the online courses 'function and people's mental states can be very different from those during ordinary times.

After 12 weeks of only online learning with no face-toface learning, we decided to analyse medical students ' perception of this teaching approach.

OBJECTIVES

We aimed to provide an overview of the situation experienced by medical students during the COVID-19 pandemic,

To determine the knowledge, attitudes, and practices of medical students regarding electronic medical education.

To investigate the perceptions and impact of online teaching on medical students education in COVID 19 pandemic

METHODOLOGY

A cross sectional survey was conducted through an online and paper based questionnaire distributed to medical students of two medical universities through E mails, face book groups and whats app groups. There were no exclusion criteria. Each student was allowed to complete the questionnaire once. All respondents were fully informed about the objectives of the study and agreed to voluntarily participate. A total of 500 students participated in this study.

Questionnaire

The questionnaire consisted of 5 parts:

In the first part students were asked to enter their demographic details describe their IT skills,

In the second part, respondents were given 6 sets of options regarding the advantages and disadvantages of e-learning

In the third part, respondents had to compare, using the Likert scale[11] (1 = definitely ineffective, 5 = definitely effective), face-to-face learning with online learning in terms of ability to master learning objectives (knowledge, clinical skills, and social competences). Students were also asked to rate their activity during classes (1 = extremely inactive, 5 = extremely active).

In the fourth-part, students were asked to rate the level of acceptance of online classes using the Likert scale from 1 to 5 (1 = extremely unenjoyable, 5 = extremely enjoyable).

► In fifth part

► Effect of pandemic on mental health of students

► In terms of stress and anxiety

► Do they feel safe to return for clinical rotations

STATISTICAL ANALYSIS

The data were analysed with the Statistic-a 13.3

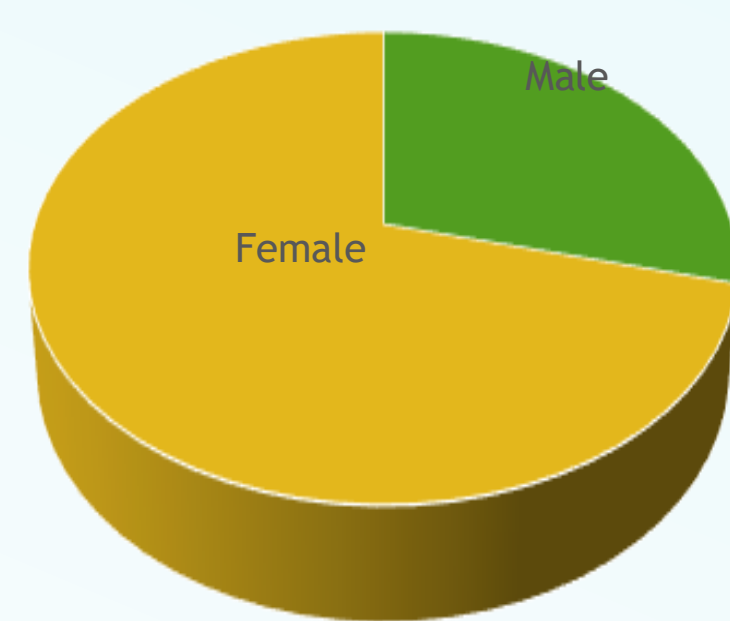
(StatSoft, Inc., Tulsa, OK) statistical software. Advantages, disadvantages, and level of acceptance of e-learning were analysed using descriptive statistics.

The nonparametric Wilcoxon signed-rank test was used to compare opinions on face-to-face and online learning. The Chi-square and Mann--Whitney tests were used to compare answers between less and more advanced students. P < .05 was considered statistically significant.

RESULTS

Characteristics of respondents

GENDER

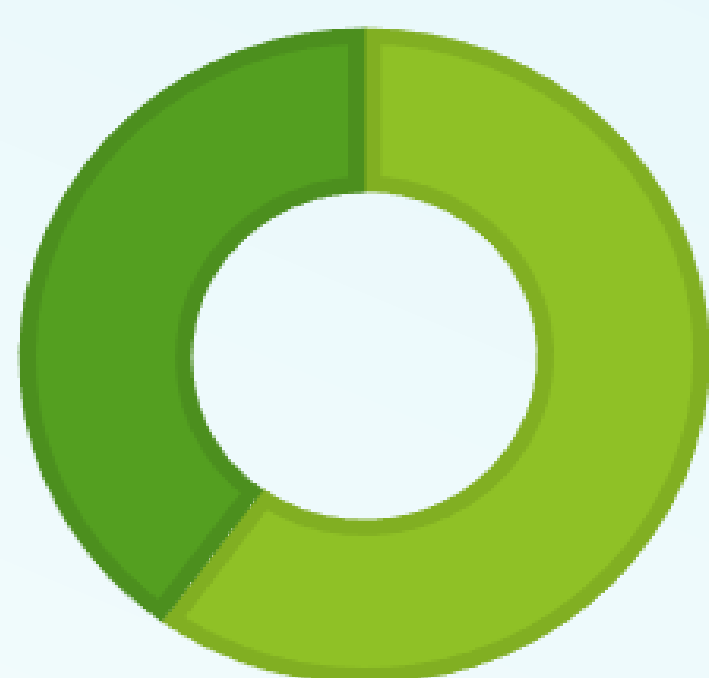


Total Student :500

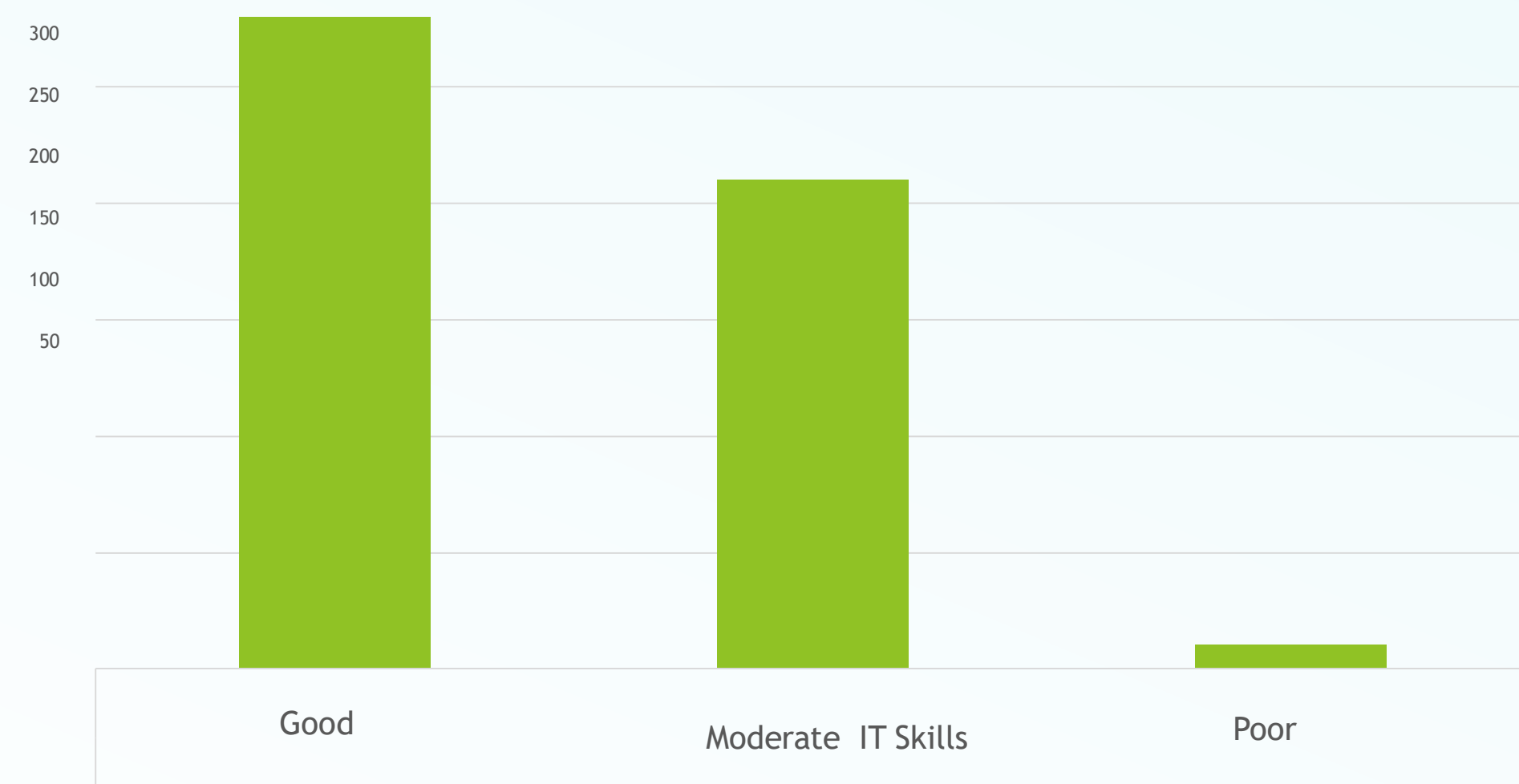
E-LEARNING

previous experience

no experience



IT Skills



Advantages and disadvantages of e-learning

Advantages	Disadvantages	%	P-value
the ability to stay at home	lack of interactions with patients	70%	(P < .001)
continuous access to online materials	technical problems with IT equipment	54%	(P = .003)
The opportunity to learn at your own pace		64%	
comfortable surroundings		54%	

Comparison between face-to-face and online learning

- There was no statistical difference between face-to- face (M = 3.23) and online learning (M = 3.27) in terms of opinions on the ability of the learning method to increase knowledge (P = .46). E-learning was considered less effective than face-to-face learning in terms of increasing skills (M = 2.03, M = 4.3, respectively) (P < .001) and social competences (M = 2.03, M = 4.2, respectively) (P < .001) (Figure 1). Students assessed that they were less active during online classes (M = 2.72) compared with traditional classes (M = 3.82) (P < .001)

Acceptance of e-learning

Respondents rated e-learning as enjoyable		
Total of (73%)	e-learning	Rate
respondents rated e-learning as enjoyable	extremely enjoyable	15%
	very enjoyable	29%
	somewhat enjoyable	28%
	did not enjoy	27%

Medical students' attitudes toward COVID-19	
Attitude	% of Students
agreed to help in hospitals during the pandemic	59%
felt that they were wasting their study potential due to the pandemic	75%
pandemic had affected their personal wellbeing	53.40%
worried about being exposed to COVID-19 during their clinical training	51.80%
no impact on their career and future specialty training	45.40%
guidance for students during the pandemic	40.30%

A significant difference was found between time spent on online platforms before and during COVID-19

15 hours per week	before COVID-19	during the pandemic	P-Value
	7.35%	23.56%	p<0.05

Students reported the pandemic had moderate effects

stress and anxiety levels	84.10%
feel safe returning to clinical rotations	53.50%
followed by adequate testing for infection	19.30%
antibody testing	16.20%

CONCLUSION

In the opinion of the respondents in our survey, e-learning is effective in increasing knowledge and is highly accepted. However, it is important not to focus only on increasing knowledge, but also on clinical and social skills.

- The knowledge, attitudes, and practice levels of e-learning were adequate. This evidences the usability of this teaching method in a country with limited resources despite the technical and socioeconomic challenges faced.

Extensive educational support should be provided to medical students, especially during the pandemic.

We recommend adapting interactive online learning lectures by using highly sophisticated technologies along with virtual clinical experience to combine clinical scenarios with similar bedside teaching based on discussions of medical cases. Such measures would help students adapt to this way of medical teaching.

CONFLICT OF INTEREST

None

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