

Medical Teachers: Factors Associated with Their Behavior Towards Online Teaching During Covid-19 Pandemic

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ABSTRACT

During these unprecedented times of COVID-19 pandemic, online teaching has allowed the continuation of medical education. Good online teaching practices should be adopted for efficient online learning. This study aimed to analyze the factors associated medical teachers' behavior towards online teaching during COVID-19 pandemic. This was a cross-sectional study at the Al-Azhar Islamic University, Mataram, West Nusa Tenggara. A total of 43 medical teachers was enrolled in this study. The dependent variable was online teaching behavior. The independent variable were knowledge, attitude, and perception. Data were collected using questionnaire and analysed using multiple logistic regression. The result showed that high knowledge (OR= 2.81; 95%CI= 2.01 to 5.51; p= 0.030), positive attitude (OR=2.19; 95%CI= 1.10 to 4.75; p= 0.041), and positive perception (OR= 5.02; 95%CI= 1.80 to 10.33; p=0.001) increased the online teaching behavior towards e-learning during pandemic Covid-19. For the conclusion, high knowledge, positive attitude, and positive perception are associate with good online teaching behavior among medical teachers.

Keywords: *medical teacher, e-learning, Covid-19.*

1. INTRODUCTION

At the height of the COVID-19 pandemic, medical faculties were forced to fully replace hands-on medical learning with online learning. This is an effort to sustain medical education in the unprecedented sense of a global pandemic [1].

Students are asked to adapt the learning process to online learning. Likewise, with medical school teachers or instructors. Bhuasiri et al. on 2012 reported that computer preparation, perceived utility, attitude towards e-learning, and computer self-efficacy were the top four factors that emerged from the data as rated by ICT experts. The top four variables, rated by faculty, were perceived utility, e-learning attitude, versatility in the program, and clear path [2].

Some advantages for teacher and student during online learning are no time zones, location and distance, students can access online materials at any time in asynchronous online learning, while synchronous online learning provides real-time interaction between students and teachers, students can access up-to-date and relevant learning materials on the internet [3].

Most people in the older generation of Indonesia tend to be stiff with technology. Both sections of the faculty portion have to brace for technical changes because of the COVID-19 pandemic. With regards to supporting online teaching in developed countries, various challenges were discussed. During the COVID-19 pandemic at Al-Azhar Islamic University, learning is done in a blended learning, traditional and online learnings. Mostly, using zoom for online teaching and online learning.

The ideal medical teacher is expected to have six key competencies. They are passion, respect, integrity, motivation, creation of good learning environment, and leadership. In education, medical educators have a fundamental role and will obviously play a major role in the conduct of pedagogical research studies [4].

There are several variables that influence how teachers act during the pandemic of COVID-19 in teaching. This study needs these questions to be answered, what factors associated medical teachers' behavior towards online teaching during COVID-19 pandemic.

2. SUBJECTS AND METHOD

2.1 Study Design

This was a cross-sectional study carried out in July-August 2020 at Faculty of Medicine, Al-Azhar Islamic University, Mataram, West Nusa Tenggara, Indonesia.

2.2 Population and Sample

The population was all medical teachers who were in charge in some courses i.e., urogenital 1, urogenital 2, health tourism, and family medicine. A total sample of this study was 43 medical teachers from Faculty of Medicine, Al-Azhar Islamic University who were in charge in some courses including urogenital 1, urogenital

2, health tourism, and family medicine. The sampling technique used was convenience sampling.

2.3 Study Variables

The dependent variable was online teaching behavior. The independent variable were knowledge, attitude, and perception.

2.4 Data Analysis

Medical teachers were asked to completed the google form (online questionnaire). The medical teacher who willing to participate was selected for this study. The data were then analysed using multivariate analysis, i.e., logistic regression using STATA program version 13.

2.5 Research Ethic

Research ethic was included the approval sheet, anonymity, confidentiality, and ethical disputes. Ethical clearance in this study comes from the Ethics Committee of the Faculty of Medicine, Al-Azhar Islamic University with number: 30 / EC / FK-06 / UNIZAR / VIII / 2020.

3. RESULTS

Based on the analysis with the logistic regression test, the following results were obtained and presented in Table 1.

Table 1. The results of multivariate analysis using logistic regression analysis

Online Teaching Behavior	OR	95%CI		p
		Lower	Upper	
Knowledge (high)	2.81	2.01	5.51	0.030
Attitude (good)	2.19	1.10	4.75	0.041
Perception (positive)	5.02	1.80	10.33	0.001
N Observation = 43				
Log Likelihood = -124.10				
R2 = 0.043				
p <0.001				

Based on the results, it can be explained that online learning behavior was influenced by medical teachers' knowledge, attitude, and perception about online learning. The results of logistic regression can be explained as follows:

3.1 Effect of knowledge on online teaching behavior

There was a relationship between medical teacher's knowledge with online teaching behavior. Medical teacher with good knowledge had the likelihood of having good online teaching behavior 1.94 units higher

than medical teacher with less knowledge (OR= 2.81; 95%CI= 2.01 to 5.51; P= 0.030).

3.2 The influence of attitude on online teaching behavior

There was a relationship between medical teacher's attitude with online teaching behavior. Medical teacher with a good attitude had the possibility of good online teaching 1.96 units higher than medical teacher with negative attitude (OR=2.19; 95%CI= 1.10 to 4.75; P= 0.041).

3.3 Effect of perception on online teaching behavior

There was a relationship between medical teacher's perception with online teaching behavior. Medical teacher with good perceptions had a probability of good online teaching behavior 7.02 units higher than medical teacher with negative perception (OR= 5.02; 95%CI= 1.80 to 10.33; P=0.001)

4. DISCUSSION

COVID-19 pandemic had the power to stop activities. This has undermined the process of medical education and has intensified the need for alternatives to be found. Scheduled live online video lectures with interactive discussions and the use of many different programs or self-study online recorded lectures made accessible online for medical students at each university are some of the most widely suggested methods [5,6].

However, as some departments have begun to provide medical students with online learning, the medical teacher must analyze their viability and decide whether they are sufficient to help medical students continue their education [7].

Social cognitive theory seeks to predict human behavior and develops a better understanding of human behavioral changes. In the field of social and psychology studies. The relationship between personal factors, environmental variables, and behavioral factors is clarified by social cognitive theory [3].

This study reported that high knowledge, positive attitude, and positive perception are associate with good online teaching behavior among medical teachers.

4.1 Knowledge on medical teacher behavior during online teaching

In this study, the knowledge focusing on medical teacher ability to understanding the information regarding how to teach and giving instructions through online learning. Most of the teacher understand the reason why the learning methods were transferred to online learning, what they should prepare, and do they know about how to use zoom during the teaching section.

Most studies use cognitive psychology's distinction between declarative (knowing that) and procedural knowledge (knowing how). It focuses on the relationship between knowledge and behavior, or, in other words, the quality of teaching [8].

Teachers especially medical teachers can be expected to process and evaluate new knowledge relevant to their core professional practice, as well as to regularly update

their knowledge base to improve their practice and meet new teaching demands, as professionals in their field [8].

4.2 Attitude on medical teacher behavior during online teaching

This study showed that positive attitude increased the chance to have good behavior during online teaching among medical teacher. Positive attitude led to success, while negative attitude led to failure and can lead to positive ego attitude as a result of success, while failure leads to negative ego attitude. For instance, if the instructor makes derogatory remarks about a student because of his or her weakness, the detrimental effects of this would be inevitable.

While teacher knowledge is an important part of teacher professionalism, professional competence entails much more. Teaching and learning mastery is also influenced by skills, attitudes, and motivational factors [8]. Positive attitude of teachers has positive effects on the success and personality development of students, negative attitude has a negative impact on both student performance levels and personality development. This, in fact, clearly shows that teachers in particular transcend the limits of the classroom in the educational lives of individuals and how successful they can be throughout the student's entire life [9].

In addition, during the COVID-19 pandemic, teachers displayed a positive attitude towards the use of technology in teaching online. The purpose of teachers to use technology in online teaching and their interest in it is very strong. They also felt that their digital skills should be improved. This showed that teachers recognized in their teaching practices the value of technology [10].

4.3 Perception on medical teacher behavior during online teaching

Perception is the thought about something that has been done, and it can be expressed by attitude. Perceptions of teachers are a vital factor in defining the learning process environment. The perceptions of teachers form an important element in defining the learning process environment. In addition, higher educational institutions need to embrace, introduce, and incorporate technological innovations, including e-learning, in order to succeed. Teachers should know how to use the program for e-learning. The teachers, in truth, still have a problem with it [11].

Literature highlights reported that extensive pedagogical content knowledge, better problem-solving strategies, better adaptation for diverse learners, better decision making, greater sensitivity to context, greater respect for students, and better perception of classroom are all characteristics of expert teachers [8].

One example of good online teaching behavior is the awareness of providing feedback. In a study, by Yengin et al., it was reported that feedback is the most important especially in learning. Because there is no face-to-face interaction in online learning, feedback is more important. The importance of feedback and how to use it properly must be understood by medical teachers [12].

From study results, it is need to understand that a strong institutional commitment, demonstrated by the allocation of both curricular time and resources, requires the success of any given program. The teaching atmosphere must encourage and reward professional behaviours and not accept unprofessional behaviours with specific attention to the case of negative role models who require remediation or even withdrawal from interaction with trainees to be provided [13]. Despite these obstacles, there are still opportunities to increase the efficacy and success of e-learning [2].

5. CONCLUSION

Good online teaching behavior among medical teachers is associate with high knowledge, positive attitude, and positive perception. Medical faculty should provide the right information and facilities to make sure that the medical teacher can behave to make a good online learning environment, in the context of medical teaching.

AUTHORS' CONTRIBUTIONS

Dian Rahadiani made the study problem, analysed the data, and prepared the manuscript. Artha Budi Susila Duarsa enriched the background and discussion. Dina Qurratu Ainin developed and shared the questionnaire.

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REFERENCES

[1] Vallee A, Blacher J, Cariou A, Sorbets E. Blended learning compared to traditional learning in medical education: Systematic review and meta-analysis. *J Med Internet Res* 2020;22. <https://doi.org/10.2196/16504>.

[2] Bhuasiri W, Xaymoungkhoun O, Zo H, Rho JJ,

Ciganek AP. Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Comput Educ* 2012;58:843–55. <https://doi.org/10.1016/j.compedu.2011.10.010>.

[3] Tadayon Nabavi R. *Bandura's Social Learning Theory & Social Cognitive Learning Theory* 2012.

[4] Hasan T, Bani I, Ageely H, Fauzi M. An Ideal Medical Teacher. *Educ Med J* 2011;3:54–9. <https://doi.org/10.5959/eimj.3.1.2011.spc1>.

[5] Mian A, Khan S. Medical education during pandemics: A UK perspective. *BMC Med* 2020;18:100. <https://doi.org/10.1186/s12916-020-01577-y>.

[6] Chiodini J. Online learning in the time of COVID-19. *Travel Med Infect Dis* 2020;34:101669. <https://doi.org/10.1016/j.tmaid.2020.101669>.

[7] Alsoufi A, Alsuyihili A, Msherghi A, Elhadi A, Atiyah H, Ashini A, et al. Impact of the COVID-19 pandemic on medical education: Medical students' knowledge, attitudes, and practices regarding electronic learning. *PLoS One* 2020;15:e0242905. <https://doi.org/10.1371/journal.pone.0242905>.

[8] Guerriero S. *Teachers' Pedagogical Knowledge and the Teaching Profession: Background Report and Project Objectives* 2013.

[9] Ulug M, Ozden MS, Eryilmaz A. The effects of teachers' attitudes on students' personality and performance. *Procedia - Soc Behav Sci* 2011;30:738–42. <https://doi.org/10.1016/j.sbspro.2011.10.144>.

[10] Rahayu RP, Wirza Y. Student's Perception of Online Learning during COVID Pandemic. *J Penelit Pendidik* 2020;20:392–406.

[11] Lee TS, Tsai HJ. The effects of business operation mode on market orientation, learning orientation and innovativeness. *Ind Manag Data Syst* 2005;105:325–48. <https://doi.org/10.1108/02635570510590147>.

[12] Yengin I, Karahoca D, Karahoca A, Yücel A. Roles of teachers in e-learning: How to engage students & how to get free e-learning and the future. *Procedia - Soc Behav Sci* 2010;2:5775–87. <https://doi.org/10.1016/j.sbspro.2010.03.942>.

[13] Altirkawi K. Teaching professionalism in medicine: what, why and how? *Sudan J Paediatr* 2014;14:31–8.