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Open and Distance Learning (ODL) During Covid-19: Obstacles faced by nursing students and its effect on their attitudes

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Abstract

An unexpected shift from face-to-face to online learning during the Covid-19 pandemic has given a massive challenge to the students. This study aims to determine the common obstacles and their effect on nursing students' attitudes towards open and distance learning (ODL) during Covid-19. The study employed a quantitative research design. The findings showed that 2% of nursing students had obstacles during ODL. The most common dimension of ODL obstacles was curriculum content. There was a statistically significant between obstacles faced and their attitude towards ODL. Nursing students encounter no difficulties during the ODL. However, their attitudes were greatly affected throughout the ODL.

Keywords: Obstacle(s), Attitude, Open Distance Learning (ODL), Covid-19

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1.0 Introduction

The Covid-19 pandemic severely impacted higher education as universities closed their premises and countries shut their borders in response to MCO measures. The impact of Covid-19 has affected the physical, and emotional interaction, expectations towards learning, and economics of students. However, higher education institutions have taken a quick step in replacing face-to-face learning with Online and Distance Learning (ODL). ODL, also known as e-learning and online learning, is a type of education in which teachers and students are geographically separated during classes, and various technologies are used to facilitate student-teacher and student-student connections (Simonson, Zvacek, & Smaldino, 2019). Changes from face-to-face to ODL have raised several crises related to students' education, including networking, social opportunities, and educational content. This study's problem led to changes in learning methods and expectations. A previous study from Ramos et al. (2020) states that the students did not choose to change to the online methodology, and their expectations for their studies were disrupted. Besides that, El Said (2021) found that the sudden shift in learning methods was associated with higher anxiety levels among students. It can be said that being exposed to too many stressors might interfere with the student's concentration on online learning. In consequence, the attitudes of students will be impaired. Suddenly using online educational tools during a pandemic disrupts student's motivation to learn. A lack of knowledge and ability to use technology in online learning will

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automatically demotivate the student. Last but not least, lack of physical contact, less social interaction, and negative emotion during students' learning process is some of the issues. It was proved by Patricia (2020) that which is a lack of physical contact, reduction in social interaction, and negative emotions that the pandemic created, such as fear, sadness, and uncertainty, will influence students' attitudes of daily life habits. Thus, this problem may affect the education's quality of students. Referring to Basilaia and Kvavadze (2020), the researchers stated that there was necessary to investigate the quality of online learning among students in each country as the Covid-19 pandemic changed the student's ways of teaching and learning. Furthermore, the effectiveness and efficiencies in using technology-based learning and learning materials advanced the ODL's quality assurance and enhancement (Musa et al., 2020). In addition, the problem has grown in importance in light as it will impact the students' attitudes towards ODL as well as students' motivation and performances. Hwang (2015) reported that the students with positive attitudes were actively engaged in discussion time, and the students who portrayed a negative attitude were found not to be actively involved in online activity. Moreover, the need to focus on students' attitudes should be considered to improve the integrative use of media technology in learning. It promotes teaching and learning closer to students' preferences and interests (Candeias et al., 2010). Therefore, researchers were interested in focusing on the obstacles and attitudes faced by nursing students in one of the universities in Malaysia. Besides that, it also attracts the researcher's interest in investigating the correlation between obstacles faced by nursing students and their attitudes and between students' sociodemographic characteristics towards ODL during the Covid-19 pandemic.

2.0 Literature Review

During the Covid-19 pandemic, most students had difficulty adapting to new learning methods, from face-to-face to online education, open and distance learning (ODL). Numerous studies have attempted to explore the obstacles in online learning during the Covid-19 pandemic. A current study by Tan et al. (2020), conducted among 700 Malaysian students, found that the most significant challenges Malaysia students faced during online learning were internet connection, unclear and inconsistent learning structure, and lack of engaging interaction. Moreover, the researcher also found that not having a conducive learning environment and distractions such as household responsibilities and home entertainment may also disrupt the students' focus on learning during the pandemic. While a large-scale study by Rajab, Gazal, and Alkattan (2020), who has used a cross-sectional study among 1289 students, also found that communication, student assessment, use of technology tools, online experience, pandemic-related anxiety or stress, time management, and technophobia were the challenges that faced by medical students during online education in Covid-19 pandemic. It can be concluded that open distance learning creates more challenges and problems in student's studies. Thus, the students' motivation in learning and academic performances also be impacted. As obstacles present during student's online learning, this influences student's attitudes throughout the pandemic. Diab and Elgashsh (2020) found that about 61.6% of nursing students had negative attitudes towards e-learning. The highest percentage who had negative attitudes toward using e-learning was found among first-year students. Having negative attitudes will also affect students' performances, skills, and learning. On the other hand, a recent study by Sert Ađır (2019) shows that the students studying in public high schools had negative attitudes towards learning. A recent survey from Mohamed Abd El-Hamed Mohamed Abd El-Hamed Diab and Fouad Elgahsh (2020) discussed the effect of obstacles faced by nursing students on their attitudes towards e-learning while applying it during the COVID-19 pandemic. The study found that the nursing students had the highest percentages of negative attitudes (61.6%) towards online learning. Similarly, Alakrash and Razak (2020) reported that having communication barriers between learner and instructor contributes to an increase in negative perceptions towards online learning. As a conclusion for this literature review, researchers can conclude that major studies were focused on the obstacles, attitudes, and acceptance of students toward ODL during the Covid-19 pandemic. Last but not least, as only a little research has been conducted in Malaysia regarding this topic, it cannot reflect the actual situation's student learning during this pandemic Covid-19 in Malaysia. Therefore, researchers were inspired to conduct research regarding the obstacles and attitudes of Malaysian students among nursing students.

3.0 Methodology

3.1 Study design

This study was quantitative. This design was a study that emphasizes the objective measurements and statistical analysis of data collected through Web-based questionnaires. The study design used was a cross-sectional study.

3.2 Setting

This study was conducted at the Faculty of Health Science, UiTM Selangor, Puncak Alam Campus. This setting has been chosen because it has had the highest number of nursing students among UiTMs.

3.3 Sample

The target population for this study was full-time degree nursing students. The sample was selected through a name list using a purposive sampling method. The total number of samples in this study was 128.

3.4 Sample size

The total population of nursing students in UiTM Selangor was 157 students. Based on the Raosoft Sample Size Calculator, the recommended sample size for this study was 112 with a 5% margin of error, 95% confidence level, and 50% response distribution. A 10% non-response rate was added to 112. Therefore, the total number of respondents needed was 128.

3.5 Inclusion and exclusion criteria

A few criteria have been considered to be involved in this study. The first criteria included in this study were that the individuals must be full-time nursing students in years 2, year 3, and year 4. Besides that, the other criteria were the students must be involved in ODL during MCO. Meanwhile, for exclusion criteria, the researchers excluded part-time nursing students because they had already adapted to the online learning mode before the pandemic. Moreover, students on leave were also excluded from this study as they were not fully involved in open distance learning during this pandemic.

3.6 Instruments

Sociodemographic data: It included gender, age, year of study, rural/ urban, device for ODL activities, the platform used in ODL, and internet access. The instrument used in this study was the Obstacles of Open and Distance Learning Questionnaire and Attitudes towards Open and Distance Learning Scale adapted from Mohamed Abd El-Hamed Diab and Fouad Elgahsh (2020). **Obstacles of Open and Distance Learning Questionnaire:** This questionnaire contains five dimensions: learners' characteristics (5 items), technical and management support (5 items), infrastructure and technology (5 items), curriculum content (5 items), and instructors' characteristics dimension (5 items). This used a five-point Likert Scale from "1" (strongly disagree) to "5" (strongly agree). For the scoring system, the scores were calculated by summing up the score of items of each dimension of obstacles, and the total was divided by the total number of items in each domain. Giving a mean score for each obstacle dimension was calculated. Then, summing up all five dimensions gives overall scores for students' obstacles towards ODL. These scores were converted into percent scores. For the scoring range, 60% and more scores indicate that the obstacles occurred. If scores are less than 60%, it indicates obstacles were absent. **The Attitudes towards Open and Distance Learning Scale:** It contained three domains: Open and distance learning usefulness (6 items), Open and distance learning ease of use (6 items), and behavioral intension (6 items). This scale used a five-point Likert Scale from "1" (strongly disagree) to "5" (strongly agree). For the scoring system, the mean score of each item can be measured by summing up the score of an item and dividing it by the total number of items. The same method was also used to find the mean score for each domain. These scores were converted into percentages. If scores are less than 60%, it indicates negative attitudes. Meanwhile, if scores are 60% and more, it shows a positive attitude.

3.7 Data collection

Data were collected over a period of four months. It is conducted from December 2020 to August 2021. After ethics were approved by the UiTM Research Ethics Committees with reference number REC/12/2020 (UG/MR/238), researchers would identify the potential respondents based on inclusion and exclusion criteria. Then, researchers would select the respondents through purposive sampling. The objective of the study was explained to respondents. Informed consent has been obtained from the respondents in getting their permission for this study. The questionnaires were distributed online to those who agreed. They would click the agreed button to participate in this study and proceed to the next section to answer the questions. Approximately students need 20 to 30 minutes to fill up the questions.

3.8 Data analysis

Descriptive statistics were used to analyse the sociodemographic characteristic data, the common obstacles faced by nursing students, and the nursing students' attitudes towards ODL during the Covid-19 pandemic. Means and standard deviations were calculated for the continuous variable. For categorical data, frequency and percentages were used. Pearson correlation was used to know the relation between the total score mean of obstacles and the total mean of attitudes. A Chi-square test was used to analyze the categorical variables, which were between the sociodemographic characteristics' variables except for the live-in and ODL obstacles variable and between attitude towards ODL variable. Fisher exact tests were used between ODL obstacles faced and live-in variable as well as between attitudes towards ODL because the assumption of expected frequency is not met. Data were entered and analyzed using the IBM SPSS version 26. The level of significance was $p < 0.05$.

4.0 Findings

4.1 Demographic data

As shown in Table 1, 54.7% of nursing students were from rural areas. Next, regarding devices used during ODL, the smartphone and laptop were recorded as the highest devices used by students chosen during pandemic Covid-19 with statistics (75.8%). In addition, smartphones and computers were the lowest percentages of devices used (0.8%). For the platform used in the ODL aspect, most nursing students (31.3%) used WhatsApp, Telegram, Google Meet, and Zoom. Regarding internet access, more than half of nursing students (68%) had moderate internet access during ODL. Meanwhile, 25.8% of nursing students had good internet access, and about 8 out of 128 nursing students (6.2%) had poor internet access during this ODL.

Table 1. Sociodemographic characteristics of the study subjects (N=128)

Variables	Values	n	%
Age	Mean (SD)	22.07 (0.95)	
Gender	Male	13	10.2
	Female	115	89.8
Year of study	Year 2	42	32.8
	Year 3	47	36.7
	Year 4	39	30.5
Live in	Rural	70	54.7
	Urban	58	45.3
Device used for ODL	Computer only	3	2.3
	Laptop only	21	16.4
	Smartphone only	4	3.1
	Smartphone/Laptop	97	75.8
	Smartphone/Computer	1	0.8
	Computer/Smartphone/Laptop	2	1.6
	Google Meet	12	9.4
	Whatsapp, Telegram, Google Meet, Ms Team	8	6.3
	Whatsapp, Telegram, Google Meet, Zoom, Student Portal	1	0.8
	Whatsapp, Telegram, Google Meet, Zoom, Ms Team	9	7.0
Platform used in ODL	Whatsapp, Telegram, Google Meet, Zoom, Ms Team, Google Classroom	2	1.6
	Google Meet, Ms Team	1	0.8
	Google Meet, Zoom	9	7.0
	Whatsapp, Google Meet	8	6.3
	Whatsapp, Telegram, Google Meet	27	21.1
	Whatsapp, Google Meet, Zoom	9	7.0
	Telegram, Google Meet, Zoom	1	0.8
	Telegram, Google Meet, Ms Team	1	0.8
	Whatsapp, Telegram, Google Meet, Zoom	40	31.3
	Good	33	25.8
Internet access	Moderate	87	68.0
	Poor	8	6.2

4.2 Common Obstacles Faced by Nursing Students towards ODL during Covid -19 Pandemic

This finding highlights the common obstacles faced by nursing students towards ODL during the Covid-19 pandemic. From Table 2 we can see that the curriculum content shows the highest mean score and the most common obstacles faced by nursing students among other dimensions, with a mean score was 16.45 (5.04). Meanwhile, the instructor's characteristics were shown as the less common obstacles faced by nursing students, with the lowest mean score of 13.53 (5.26).

Table 2. Mean score of obstacles towards ODL according to domain

Obstacles Domain	Mean (SD)	Min	Max
Learner characteristics	14.23 (5.34)	7	21
Technical and management support dimension	14.74 (4.96)	7	21
Infrastructure and technology	14.91 (5.28)	7	21
Curriculum content	16.45 (5.04)	7	21
Instructors characteristics	13.53 (5.26)	7	21

Figure 1 shows that only 2% of nursing students had obstacles during ODL, while another 98% of nursing students reported an absence of obstacles towards the ODL.

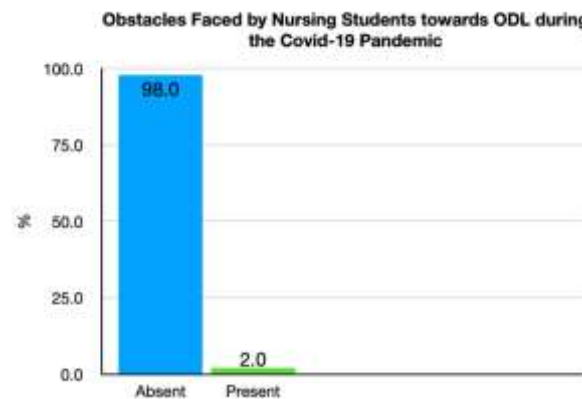


Fig. 1: Distribution of obstacles faced by nursing students towards ODL during the Covid -19 pandemic (N=128)

4.3 Attitudes towards ODL during Covid -19 Pandemic

This result focuses on nursing students' attitudes towards ODL during the Covid-19 pandemic. As can be seen from Table 3, the highest mean attitude score was in the open and distance learning usefulness domain with a mean (SD) of 13.18 (3.97). Meanwhile, the behavioural intention domain had the lowest mean attitude score among the domain with a mean (SD) was 10.41 (4.14).

Table 3. Mean attitude scores according to each attitude domain

Attitudes Domain	Mean (SD)	Min	Max
Open and distance learning usefulness	13.18 (3.97)	6	18
Open and distance learning ease of use	11.71 (4.36)	6	18
Behavioural intension	10.41 (4.14)	6	18

As shown in Figure 2, what is interesting in this data was the highest percentage of nursing students (90.6%) had a negative attitude toward using ODL. Meanwhile, 12 nursing students (9.4%) had positive attitudes towards using ODL during the pandemic.

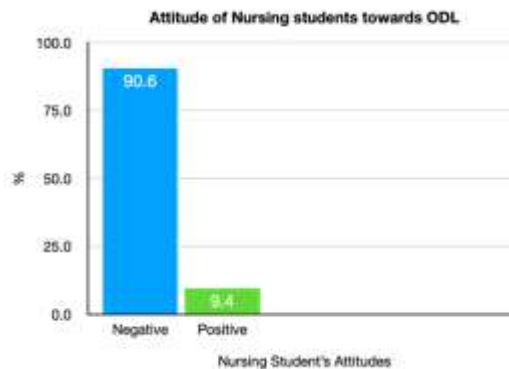


Fig. 2: Distribution of nursing students according to overall attitude towards open and distance learning (N=128)

4.4 Correlation Between Obstacles Faced by The Nursing Students and Their Attitudes Towards ODL during the Covid-19 Pandemic

This finding showed the correlation between obstacles faced by nursing students and their attitudes towards ODL during the Covid-19 pandemic. Based on table 4, there was a statistically significant ($p = 0.013$), negative and poor correlation between obstacles faced which was in curriculum content dimension and total scoring of attitude towards ODL obstacles ($r = -0.22$). In addition, the study also shows that there were highly statistically significant positive correlations for each dimension of obstacles faced by nursing students since $p < 0.01$.

Table 4. Correlation between the domain of ODL obstacles and attitudes towards ODL among nursing students (N=128)

Variables	1	2	3	4	5	6
1. Total scoring of ODL attitudes	-					
2. Learners' characteristic	0.30	-				
3. Technical and management support	0.05	0.60**	-			
4. Infrastructure and technology	0.03	0.43**	0.66**	-		
5. Curriculum content	-0.22*	0.42**	0.46**	0.42**	-	
6. Instructor's characteristics	0.00	0.34**	0.36**	0.29**	0.43**	-

(* correlation is significant at the 0.05 level (2-tailed)

(**) correlation is significant at the 0.01 level.

5.0 Discussion

5.1 Obstacles faced by nursing students towards ODL during the Covid-19 pandemic

The current study result showed that the most common obstacle faced by nursing students towards ODL during pandemic Covid-19 was in the curriculum content dimension. The result shows that most nursing students were facing challenges from this aspect, especially related to the lack of educational tools and resources, inability to understand the content of the subject, and inability to conduct practical sessions electronically for some courses during ODL classes. Subedi (2020) stated that one of the difficulties nursing students experienced was that they did not fully comprehend the contents of courses taught by instructors during online classes. However, these results differed from a previous study by Mohamed Abd El-Hamed Diab and Fouad Elgahsh (2020), where the most important obstacles that were reported among students for the study were infrastructure and technology dimensions. The researchers concluded that there was a lack of infrastructure in the usage of an e-learning platform and slow internet connections with frequent outages and an e-learning system design that was maybe not adaptable and challenging to use.

5.2 Attitudes towards ODL during the Covid-19 pandemic

The findings revealed that more than three-quarters of nursing students generally had an overall negative attitude towards ODL. In contrast, less than 10% of students report a positive attitude towards ODL. This result indicated that most of the nursing students experienced a

change in attitude due to a sudden change in the way of learning. Besides, the nursing students are not ready for the practice of open distance learning as it is difficult for respondents to adapt to the new way of learning in this pandemic. This result aligns with a prior study in which the nursing students have demonstrated a negative attitude towards e-learning (Mohamed Abd El-Hamed Diab & Fouad Elgahsh, 2020). Conversely, Alanazy (2011) reported that nursing students had positive attitudes towards online learning. Besides, Hew and Lo (2018) stated that positive or neutral academic outcomes could be produced by nursing students through open distance learning. The result might be slightly different from previous studies due to several associated factors. For instance, nursing students today are more skilled in using technology. Some have been exposed early to online learning such as blended learning by their lecturers before the pandemic outbreak.

5.3 The correlation between obstacles faced by nursing students and their attitudes towards ODL during the Covid-19 pandemic.

The present finding revealed that there was a negative and poor correlation with statistically significantly different between ODL obstacles which were curriculum content domain and total score of attitudes towards ODL. From this, it can be concluded that there is a poor relationship between obstacles faced by students and the attitudes towards ODL. From researchers' perspectives, encountered with many challenges during online learning, a student's enthusiasm, and expectations towards ODL would fade. As a result, the students' attitudes may become more negative towards ODL during this pandemic. This is supported by a study from Getie (2020), which proved that attitudes are shaped by a person's values, beliefs, interests, and expectations, and also this has a significant influence on student's learning.

6.0 Conclusion & Recommendations

In a nutshell, the study concluded that a minority of nursing students faced obstacles in ODL. The obstacles are present regarding five domains: learner characteristic domain, technical and management support domain, infrastructure and technologies domains, curriculum content domains, and instructor's characteristics domain. But the most common obstacle present among nursing students is the curriculum content domain. Besides that, this study more than three-quarters of nursing students generally had an overall negative attitude towards ODL. Furthermore, the present finding revealed that there was a negative and poor correlation with statistically significantly different between ODL obstacles which were curriculum content domain and total score of attitudes towards ODL. Based on the study, the researchers suggested some recommendations to conduct a future study. First and foremost, the researcher recommended that the study regarding open and distance learning during pandemics should be replicated on large sample size. This is because more references can be made in the future, especially for the new researcher. Besides that, the setting of this study also can be conducted in multi-university in Malaysia and the population can be involve many races such as Malay, Chinese, Indian and Bumiputra. Last but not least, researchers also recommended that the future study should be conducted collaboratively with nursing students from different universities or between international nursing students. Perhaps, the data findings from this study can be beneficial to both students and lecturers in which give improves the knowledge and quality of applying IT skills in the nursing profession. Hence, this study helps discover the new issue related to ODL obstacles and student attitudes where it will affect student learning, performance, and academic achievement.

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Paper Contribution to Related Field of Study

This paper contributes to the education and learning environment.

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