

## ORIGINAL ARTICLE

# Challenges and Preferred Features of Online Distance Learning in Obstetrics & Gynaecology Course: A Qualitative Analysis

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## ABSTRACT

**Introduction:** The Covid-19 pandemic has led to unprecedented transformation of the delivery of Obstetrics and Gynaecology (O&G) course to online distance learning (ODL). This study aimed to explore the challenges and preferred features on ODL among the students during the Year 3 O&G course. **Methods:** This study was a qualitative component of a cross-sectional survey on 'Students' Readiness and Perception on Online Distance Learning for Obstetrics & Gynaecology Course during COVID-19 Pandemic' among Year 3 medical students. It included 193 students post-theory block and 200 students post-clinical block. We described the changes made to the O&G course structure in adopting the ODL. Two open-ended questions were given at the end of each block to explore the research questions. Demographic data was analysed and thematic analysis of the responses was performed. **Results:** Eight themes of challenges were identified and the top four were poor internet connection, difficulty to understand clinical or practical subjects, difficulty to focus during learning and distraction from the surroundings. On the other hand, seven themes for students' preferred features on ODL were found which includes enthusiastic tutors, beneficial learning activities, accessible learning material, adequate learning material, interesting topics, flexible learning, and organised teaching structure. **Conclusion:** Teaching clinical courses such as O&G through ODL can be effective, however, the challenges faced by the students must be addressed and the preferred features on ODL should be further strengthened to maintain the high quality of clinical education. Hence, ODL may continue to supplement the traditional teaching method, despite after pandemic

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## INTRODUCTION

The Covid-19 pandemic caused significant changes in medical undergraduate education. Strict public health measures, such as movement restrictions, gave a significant impact on traditional face-to-face hospital-based training. In medicine, the student-patient relationship is crucial (1). However, because of the possibility of transmission, direct physical student-patient interaction cannot be allowed as per the national regulations. Malaysia implemented a strict movement-controlled order (MCO) during the first wave of the

pandemic. There were interstate restrictions, a 10 km radius restriction, and all non-essential public and private services were suspended for months. Higher education institutions were affected as well, hence the adoption of online distance learning (ODL) was unavoidable to ensure students could continue to learn (2).

The Faculty of Medicine at Universiti Teknologi MARA (UiTM) is the largest public higher education institution in Malaysia that offers a Bachelor of Medicine-Bachelor of Surgery programme (MBBS). Pre-pandemic, the medical students received clinical training in two busy tertiary hospitals, which exposed them to a multitude of clinical cases, and this remarkably contributed to their undergraduate training. However, the rising incidence of Covid-19 led to the suspension of normal clinical activities for medical students. This difficult situation had

put our medical faculty to test, however the decision to embrace ODL was made promptly with various support provided by the university to both lecturers and students to ensure smooth transition to ODL for everyone. Despite experience with blended learning and some online learning, pre-pandemic, ODL had never played a major role, particularly in clinical education.

This unprecedented online conversion in teaching and learning (T&L) was happening worldwide as well, including all the renowned medical schools. The changes seen in medical schools around the world, the pandemic status, the gravity of an unknown disease pathology, the need for a continuous supply of medical doctors, and the right to continue education were all contributed to the rapid conversion to online learning (3,4,5).

UiTM has provided lecturers and students access to some learning management system under UiTM institutional licence. All courses, including our O&G Course were required to redesign their T&L so that learning could be optimised through ODL, and students could learn at their own pace. There were many literature that supported this move. A systematic review and meta-analysis found that online learning can be considered in undergraduate medical education (6). In terms of knowledge and skills, online learning outperformed offline learning. It improved student learning and was found to be comparable to traditional offline instruction. A web-based learning system had a positive impact and proved to be a viable alternative for clinical education (7).

Early studies on ODL have yielded positive results (6, 7, 8), which aid in the execution of this contingency plan. However, in a local setting, studies involving undergraduate medical education are scarce (9). This study aimed to explore the challenges faced by the students and to identify preferred features of the ODL among the students during the Year 3 O&G course. This would provide local data that can be utilised to enhance medical education, particularly in O&G training through ODL. The findings should provide some insight into how to improve ODL, for better students' learning experiences in the future.

## MATERIALS AND METHODS

### Study design

This study was a cross-sectional, qualitative survey on 'Students' Readiness and Perception on Online Distance Learning for Obstetrics & Gynaecology Course during COVID-19 Pandemic' among Year 3 (2020/2021) medical students, Faculty of Medicine, Universiti Teknologi MARA. This paper focuses on the findings of two open-ended questions that were included to explore the students' challenges of ODL and the features of the ODL of the course that the students

like. The study was conducted from Oct 2020 until June 2021. The inclusion criteria were students who completed the theory and clinical block of the Year 3 Obstetrics & Gynaecology course. Data was collected through convenience sampling. This study received ethical exemption from the ethics committee, Faculty of Medicine UiTM (REC08/2022 (ST/EX/20)).

### Sample size calculation

Sample size estimation for this study was calculated based on the published data by Chung E et al. (2020), who reported the mean score of overall online learning readiness of 4.06 out of 5 among students enrolled in two online courses at a university (10). By taking  $\alpha = 0.05$ , 80% power of the study and the total number of students in the study population was 227, using OpenEpi software, the sample size estimation was 116. Considering 20% possible dropout or non-responders, the final sample size was 140.

### Online Distance Learning (ODL) Structure in Year 3 Obstetrics & Gynaecology (O&G) Course

When the pandemic began, the faculty decided to convert to ODL in order to ensure the T&L could resume. The faculty utilised Microsoft Team as the primary platform for ODL due to its various educational-friendly features and supported by evidence of its use in other health science courses (11,12). Classes or teams, activity dashboards, chat, assignments, calendar, direct calls, files, and various supporting online applications are the main features. The lecturers will also benefit from features such as organising classrooms, uploading learning materials, organising online quizzes, conducting online classes, automating tabulation of students' grades, controlling student assignments, and designing the learning structure. It also allows students to have their own online notebook, participate in class discussions, and add a variety of supporting applications to their own page.

Therefore O&G course was required to adopt the ODL in line with the faculty's aspiration as well. O&G is an eight-week introductory course in Year 3 medical training programme in Universiti Teknologi MARA. Students will have another seven-week of O&G course in their final year. All Year 3 medical students were divided into four groups, and they underwent the Obstetrics and Gynaecology course in rotations. This course's delivery methods were redesigned due to limitation of physical contact and restriction to enter clinical areas. This course was split into two parts: a three-week theory block (at home) and a five-week clinical block (in the campus). Despite the change in the mode of T&L delivery method, the faculty had ensured the learning objectives for each modules could still be achieved.

The theory block was carried out as total ODL and the clinical block was carried out as hybrid (a combination of ODL and face-to-face sessions in a simulated

environment with either mannequins, simulated patients or real patients in Clinical Skills Centre). Fig. 1 depicts the role of ODL in the students' learning environment. Within the same learning ecosystem, online learning is just another medium that connects educator and learner. As a result, the learning process may still continue and learning objectives should remain achievable. Kamal AA et. al (2020) demonstrated how this conversion can be accomplished (13). In online learning environment, essential functions such as teaching delivery, assignment and evaluation, peer-interaction, and sharing learning resources can all be done.

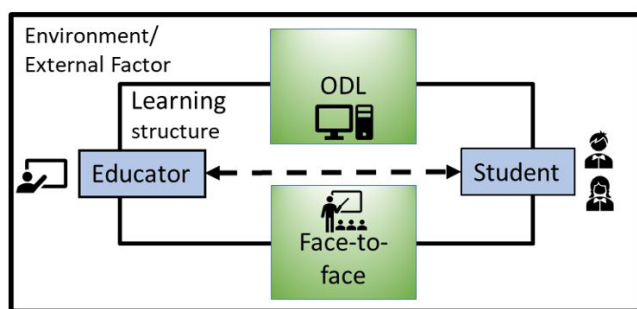


Fig. 1: Schematic presentation of online distance learning (ODL) position in learning environment.

During theory block, all the classroom teaching (e.g tutorial, lectures) were conducted online. Pre-recorded lectures, recording of online class, other relevant learning resources including procedural videos were provided in the Microsoft Team platform, and were always accessible for the students. Sessions for students to learn history-taking with either simulated patient or real patients were also included.

However, understanding the limitation of ODL function in teaching clinical skills, the hybrid method was adopted for the clinical block. This allows a physical real-time interaction between student, patient and doctor that helps skills-based learning among students. Students could have a practise history-taking and perform physical examination, despite in a simulated environment. The course also created an online ward round session in which multiple patient case notes were created, simulating the usual cases found in the ward. Through case notes discussion, we familiarised students with ward processes such as documentation, patients progress, and management in the clinical setting.

### Data collection

All Year 3 (2020/2021) medical students, Faculty of Medicine, Universiti Teknologi MARA, were invited to participate in this survey at the end of their theory and clinical block of Obstetrics and Gynaecology course. This survey was distributed to the students through Google form, and all responses were kept anonymous.

The demographic of the students was obtained, and two open-ended questions eliciting free-text responses

were included. The first question was, 'What are your challenges during your Online Distance Learning in O&G rotation?' This was designed to determine the difficulties faced by the students during ODL for this rotation. The second question was 'What do you like about the O&G rotation's online distance learning?'. This question was to identify features of the ODL that they like and help their learning process.

### Data analysis

Demographic data were analysed using descriptive frequency analysis using Statistical Package for Social Sciences (SPSS) V.28.0. Descriptive information for variables was provided as mean  $\pm$  standard deviation (SD) or in percentages.

Thematic analysis was used to analyse the qualitative data, following the steps outlined in the Braun and Clarke (2006) framework (14). First, the two researchers went through the student responses to familiarise themselves with the data. Subsequently, initial codes were assigned to each data to organise the data in a meaningful and organised way by agreement of two researchers. Then themes were identified based on the pattern of the codes that encapsulates something noteworthy or fascinating about the research questions. Then the same two researchers reviewed, modified, and developed the preliminary themes identified earlier, making sure that all the themes were coherent and distinct from each other. And finally, the refinement of themes was performed, and the relationship between the themes was determined (14). All disagreements were discussed with the third researcher until a final agreement was reached.

### RESULT

A total of 193 and 200 Year 3 medical students participated in this study after completing the theory and clinical block, respectively. Table I shows the demographic data, including students' general IT information. Tables II and III demonstrate the students' challenges and preferred features on the ODL,

Table I: Demographic data and student general IT information.

Demographic	Theory block (N=193) [n (%)]	Clinical block (N= 200) [n (%)]
<b>Gender</b>		
Male	41 (21.2%)	42 (21%)
Female	152 (78.8%)	158 (79%)
<b>Age</b>	21.17 (SD $\pm$ 0.68)	22.22 (SD $\pm$ 0.924)
<b>Type of residence</b>		
Urban	72 (37.3%)	NA
Suburban	84 (43.5%)	NA
Rural	37 (19.2%)	NA

CONTINUE

**Table I: Demographic data and student general IT information. (cont.)**

Demographic	Theory block (N=193) [n (%)]	Clinical block (N= 200) [n (%)]
<b>Type of devices used for ODL</b>		
Personal desktop	1 (0.5%)	6 (3.0%)
Own Laptop	124 (64.2%)	137 (68.5%)
Family members' Laptop	5 (2.6%)	1 (0.5%)
Tablet/ iPad	43 (22.3%)	46 (23.0%)
Handphone	20 (10.4%)	9 (4.5%)
Others		1 (0.5%)
<b>Rate of internet connection</b> (score: 1-10)	6.75 (SD±1.665)	6.88 (SD±1.688)
<b>Preference to surf internet</b> (score 1-5)	4.2 (SD±0.814)	4.35 (SD±0.806)
<b>Rate of internet literacy</b> (score: 1-10)	7.14 (SD±1.656)	7.43 (SD±1.522)

NA : Not available

**Table II: Challenges in ODL for Obstetrics & Gynaecology course.**

Component	Theme	Excerpt in Theory Block	Excerpt in Clinical Block
Learning structure	Difficulty to understand the theory subject	"take a long time to learn & understand a topic in detail"	
	Packed schedule		"There were a lot of things to cover within a limited amount of time."
System	Poor internet connection	"My internet connection is poor, so during class, sometimes i missed things lecturer was explaining."	"Internet connection problem"
	Difficulty to understand clinical or practical subjects.	"It is hard to understand some process because we did not meet or any experience with patients"	"I had no exposure to actual pregnant patients"
Students	Challenges in time management	"Having problem with myself to manage time and my study plan"	"I don't really know how to manage my time"
	Lack of motivation	"... alone at home cause me being unmotivated"	"Depleted motivation after sometime"
	Difficulty to focus during learning	"Hard to focus because study at home"	"Difficult to focus during class"
Environment	Distraction from the surroundings	"easy get distracted by surrounding"	"it's easier to be stressed because we cannot be taken away from the working/learning environment"

**Table III: Factor for preference of ODL in Obstetrics & Gynaecology course.**

Component	Theme	Excerpt in Theory Block	Excerpt in Clinical Block
Tutor	Enthusiastic tutor	"... all the lecturers are very dedicated, approachable and help the students a lot during learning process"	".....the lecturers have the passion in teaching the students."
System	Adequate learning materials	"Most of the classes' materials were provided which is really helpful in guiding us to search more information in books"	"The reading and teaching materials are adequate"
	Assessable learning materials	"I can repeat the recorded video of lecture/tutorial on MS Teams at any time I want".	"...the learning materials could be repeated as many times I want to fully understand that topic."
Learning structure	Beneficial learning activities	"I think sessions such as seminars and CPS are really useful to help me understand the topics better"	"I like that I can do practice through patient diary and PBQ as it is the way I apply what I have read by answering the clinical cases."
	Organised teaching structure	"The topics are very interesting". "The objective of each class is given, so we can read with objective"	"..... all the study materials online are organised"
	Interesting topics	"The topics are interesting and easy to understand"	"Learning about the mechanism of labour as well as managing pregnant mothers"
Students	Flexible learning	"Flexibility in learning at my own pace"	"More flexible compared to face to face"

respectively, classified based on the learning structure, system, students and environment components.

The themes identified for challenges of ODL during both theory and clinical block were poor internet connection, difficulty to understand clinical or practical subjects, difficulty to focus during learning, distraction from the surroundings, challenges in time management and lack of motivation. Additional theme found for the theory block include difficulty to understand the theory subject. On the other hand, additional theme for the clinical block was packed schedule. The exact frequency of responses according to the theme is represented in Fig. 2.

Seven themes were identified for students' preferred features on ODL during theory and clinical block, and these themes are depicted in Fig. 3. It includes enthusiastic tutors, beneficial learning activities, accessible learning

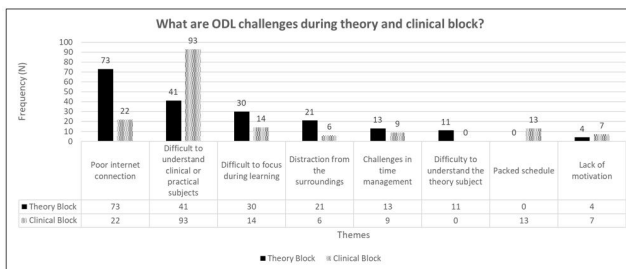


Fig. 2: Themes for challenges in ODL during theory and clinical block.

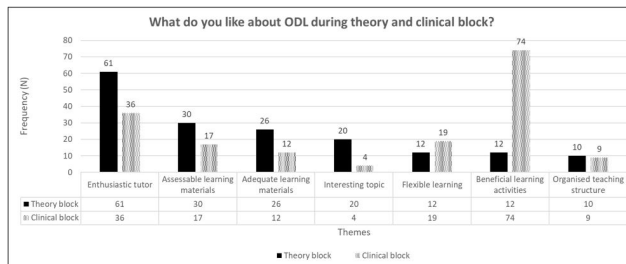


Fig. 3: Themes for preferred features on ODL during theory and clinical block.

material, adequate learning material, interesting topics, flexible learning, and organised teaching structure.

## DISCUSSION

During the Covid-19 pandemic, the rapid conversion was carried out at our institution using a learning management system to reduce technicality issues. Furthermore, with the availability of institutional subscription fees, a learning management system was a less expensive option than developing a personalised platform. Most learning management systems were created with user-friendly navigation (user interface and user experience) and the ability to include an online learning guide.

Despite the concern on potential difficulty of students utilising the new online learning platform, this was not demonstrated in this study. There were no responses, highlighting the difficulty of utilising the platform as a challenge towards ODL. Other potential contributing factors are good students' computer literacy and exposure to online learning such as Blended Learning modules, massive open online courses (MOOCs), and our own university online learning portal (U-future) during the pre-pandemic.

Much literature has reported various ODL advantages, which include ubiquity, personalisation, reduced costs, flexibility, increased overall comfort, time-saving and convenience (15). However, evidence on ODL use for clinical training was still lacking, particularly at the beginning of the pandemic. Understanding students' challenges in learning through ODL is crucial to ensure the faculty and the lecturers are able to address the concern and improve any potential remedial factors in

order to enhance the efficacy of student learning through ODL. According to a study conducted among students at a local university, students faced challenges such as internet access, self-efficacy, device issues, and the learning environment. They reported that less fortunate students may be more affected by ODL because they may have difficulty with internet access, internet speed, and ODL devices such as laptops, as well as a convenient study space (16).

According to a large number of previous studies, students' main complaints are about internet access, either the stability of the internet or the availability of devices (16, 17). This difficulty was also demonstrated in this study where poor internet connection was the most cited challenge during the theory block and came second for the clinical block. Even though the number of students who reported having a poor internet connection was much lower in clinical block, this still showed that poor internet access is a nation-wide challenge, as they faced it at home and even when the students were back on campus. However, device unavailability was not a problem encountered in this study population.

The commonest challenge reported for the clinical block was the difficulty in understanding clinical or practical subjects. It was also the second major challenge faced during the theory block. This is understandable as clinical teaching is still best taught in the clinical areas. The traditional bedside teaching and ward rounds allow students to have first-hand experience interacting with patients. Communicating with patients through an online platform was unable to give the same experience, and students found it difficult to learn the clinical/practical component of the course (16). Therefore, the sessions in CSC with simulated and real patients have been incorporated into this course to overcome this issue.

Another challenge faced by students in this study was difficulty focusing during learning. Self-control from being distracted by various social media platforms, games, and apps available is essential to continue focusing on learning. A study in India reported similar challenges during ODL (18) and another study showed that the majority of students scored low on learner control because non-educational activities became a major distraction during the learning process (10). Soft skills development, particularly on self-discipline among students, is essential to ensure they can be more focused during ODL.

The physical surrounding also plays an important role in allowing an effective ODL. Some students who come from low socioeconomic backgrounds were not able to have a conducive learning environment at home. There were also students who had to study in public places, such as cafés, to utilise the internet access due to a lack of internet access or unstable connection at home (10,19). The distraction from surrounding noise, people,



and activities was found to be one of the challenges for ODL.

Challenges in ODL could affect the psychological health of students. Students could develop a lack of motivation, anxiety, and affect their perception of ODL whenever problems arise during the learning process (20).

This study also identified themes of students' preferred features on ODL during this course, and these can be further strengthened to improve students' ODL experience. This study found that the theme for students' most preferred features in ODL during the clinical block was beneficial learning activities. The incorporation of various exposures to clinical cases, such as through case notes discussion, discussion on surgical and procedural videos, as well as problem-based questions and quizzes, was among the most preferred learning activities by the students. Despite the lack of opportunity to go to clinical areas, students still cherished the ability to get clinical exposure through this approach. This tallied with a study that showed students' perception towards online learning increased over time, and they were able to adapt to online learning and discover online ways to gain certain skills that are required of them (13).

Enthusiastic lecturers were the commonest themes that we found in the theory block. This emphasises the importance of the lecturers to stay highly motivated and find various ways to engage with the students through online communication. Lecturers can promote motivation by giving support, inspiring and improving cognitive engagement in the ODL environment. This could serve as indirect psychological help for students. Positive interaction between the students and the lecturers would have a positive impact and allay the feelings of anxiety, worry, distress, and fear of ODL among students (20). Hence, upskilling and utilising various software or online educational tools are crucial to maintaining students' engagement during ODL (21,22). The student engagement will improve a sense of social presence among the students in the ODL, and this has been shown to better satisfaction with ODL (23).

In this course, pre-recorded lectures and procedural videos were provided at the beginning of the course in the Microsoft Teams platform in a team designated for the group. The live T&L sessions were also recorded and uploaded on the platform after each session, so the students could revisit the topic at their own time to enhance their learning. Other studies also reported that asynchronous teaching methods have been preferred by a majority of students compared to synchronous methods (live) (24,25). This is a preferred feature of ODL among the students as the learning materials are always readily accessible to them.

Apart from that, the students also found that adequate learning materials were provided as another preferred

feature of the ODL. This is an important aspect to address in ODL. Because the students are studying on their own, they may have difficulty getting reliable learning resources. Hence, this is a strength that should be continued in the future.

The students also prefer the flexibility nature of ODL. They did not have to worry if they could not join the online class, or if they missed any points during the class, as the recording allowed them to replay and revise that topic. This is the most important advantage of asynchronous methods of learning and confer time-management flexibility to students (14, 25). Students can learn at their own pace, and place. This flexibility of ODL is also a time-and money-saver for the students (24, 25).

This study findings further add to the current literature that ODL is a viable learning platform for medical students (17,18). However, a combination of ODL with the traditional face-to face is essential to address the limitation of ODL. This is also in line with findings by another study in India (18). However, the challenges and preferred features of ODL identified should be utilised to enhance the ODL practice, particularly in teaching O&G course.

The limitation of this study was that the questions were open-ended self-administered inquiries, thus no additional explanations or questioning could be done for in-depth understanding of each response. In order to analyse in more in-depth on the challenges and preferred features of ODL, a future follow-up study with in-depth interviews is advised.

## CONCLUSION

Teaching a clinical course such as O&G through ODL can be effective, however, the challenges faced by the students must be addressed and the preferred features on ODL should be further strengthened to maintain the high quality of clinical medical education. ODL may continue to supplement the traditional teaching method, despite after the pandemic.

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