First Year Pharmacy Students' Perceptions on ODL during the Covid-19 Pandemic: A Thematic Analysis

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INTRODUCTION

The Covid-19 pandemic has caused significant disruptions to the normal operation of on-campus face-to-face educational delivery in higher education institutions worldwide. To reduce the spread of the coronavirus to communities, Malaysia’s Ministry of Higher Education instructed temporary closure of all universities in Malaysia from April 2020. All physical face-to-face (F2F) teaching and learning sessions moved to remote teaching, where students resumed their studies, from home, via the online distance learning (ODL) mode [1,2].

Online learning can be defined as synchronous or asynchronous learning that takes place in an online environment mediated by the use of the internet in teaching and learning [3-5]. The term ‘online learning’ is evolving in parallel with advances in technology and media; sometimes, it is used interchangeably with e-learning or considered a subset of e-learning [5,6]. Online learning, however, is not new to many higher education institutions. Since the rollout of Massive Open Online Courses (MOOCs) in 2012, this form of online learning has tremendously gained traction, with over 180 million enrolments globally in 2020, excluding China [7]. Online courses provide convenience, flexibility and invaluable access to free and affordable learning materials to learners. In the context of pharmacy education, e-learning has been reviewed recently [6,8,9]. The reviews concluded that e-learning is an accepted pedagogy with proven short-term effectiveness in pharmacy education. However, little evidence was found on its long-term effectiveness in improving skills and professional practices [6,8].

In early 2020, the threat of the coronavirus pandemic accelerated the speed and scale of the transition to full ODL at pharmacy institutions including in the Middle East [10-12] and Asia Pacific region [13]. Faculty members had to quickly adapt to emergency remote teaching to ensure that educational delivery was not disrupted. Conventional F2F lectures and practical laboratory sessions were converted to live lectures and virtual practical, which were conducted synchronously or asynchronously using remote meeting apps. Timely response to most students’ enquiries helped reduce uncertainties and unsettling feelings during online learning. Many students were able to cope with online learning and the resulting changes thanks to the continuous and unwavering support of institutions.

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and faculty members. As a result, learning continued with minimal interruptions.

While we remain convinced of the many advantages of online learning for our Digital Native students, making the full transition to ODL is not always easy [14]. We recognise many challenges faced by the faculty members and students during the transition. Access to stable internet connectivity continues to be the main issue for faculty members and students alike [2,11,15]. To accommodate students’ limited internet data or low bandwidth, in practice, many synchronous activities or live lectures were conducted with students’ webcams and microphones turned off [16]. Such practices can feel disconcerting to both faculty members and students; for faculty members, it feels like talking to a wall for the whole lecture hour. Thus, the lack of social interactions and social cues, for instance absence of body language, reactions and facial expressions have been identified as one of the most significant barriers in online learning [15,17,18].

Additionally, being used to didactic F2F delivery, faculty members may lack sound pedagogical, facilitation and technical knowledge in developing online courses. Notably, despite the shift to online delivery, many courses retain the ‘feel’ of F2F instruction [18]. Little design consideration to the design of an online course is given. An online course typically consists of an ice-breaking activity, netiquette and collaborative activities to engage students in a virtual setting [19,20].

In the last two decades, Community of Inquiry (COI) framework has emerged as a widely researched model for designing learning experiences in virtual environments [21-23]. Based on social constructivist theory, COI “represents a process of creating a deep and meaningful learning experience through the development of three interdependent elements—social, cognitive and teaching presence” [22]. Central to both social and cognitive presence is a faculty member’s online teaching presence involving course design and providing facilitation and direction to students in achieving common learning outcomes.

New to the online learning environment are the first-year undergraduate students. It was their first time at the university. They had no face-to-face meeting with faculty members and course mates, nor did they have experiences in the full ODL mode. Hence, this study seeks to explore the first-year pharmacy students’ perceptions on ODL during the first semester, which, to the best of our knowledge, has not been studied in Malaysia. Gaining an understanding of the students’ learning issues can serve as an opportunity to re-think aspects of an existing course or a programme that may not seem obvious to the faculty members. Insights from the study can help faculty members and administrators to develop pedagogical interventions and academic support for students.

**METHOD**

This study seeks to explore perceptions and experiences of the first-year undergraduate pharmacy students at Universiti Teknologi MARA on ODL during the Covid-19 pandemic. To gain an understanding of the students’ perceptions, a qualitative approach was employed. The pharmaceutical chemistry course for first year undergraduate pharmacy students consists of topics on organic chemistry and stereochemistry that were delivered via synchronous and asynchronous methods of remote teaching over a period of 14 weeks. Students’ performance in this course were assessed using a combination of a quiz (Test 1), virtual laboratory sessions and problem-based learning (PBL) sessions before the final open-book examinations at the end of Week 14.

In Week 11, a PBL briefing via Cisco Webex meeting took place and was attended by two faculty members and 107 students. Mentimeter was employed to facilitate students’ sharing their responses to a question when posed on a Mentimeter slide. The question was: please tell us (in general or specific) what are the issues in learning this course. The link to the slide was posted in the Webex chat box. A flowing grid response in Mentimeter was chosen to show the students’ responses. The students were allowed to post multiple comments without the need to share their names. The posted comments were not visible to other students during the session. They were informed that their responses would remain anonymous.

We received 56 comments in total on Mentimeter. Their responses were presented (screen-sharing) during the Webex meeting, and this led to informal and unstructured interactive discussions with the students. Several more students commented further in the Webex chat box—to agree, clarify or explain the situations or issues they had during the ODL session.

Thematic analysis of students' responses was employed as this methodology enabled us to elucidate their perceptions, namely on ODL learning issues during this unprecedented time. The analysis of students’ responses was conducted according to the steps outlined by Braun and Clarke [24,25]. The responses in Mentimeter, Cisco Webex chat box and Webex meeting recording were transcribed, compiled and categorised according to topics and frequency of responses. Immersion in the data is one of the key steps in thematic analysis; thus, familiarisation of the data involved several readings of the transcripts. Inductive analysis was conducted on the transcribed responses. An initial list of codes was developed and discussed between the authors. This led to further refinements and
development into broader patterns of meanings, or themes across many learning issues highlighted by the first-year pharmacy undergraduate students in the first semester.

RESULT

Three themes were developed from the analysis of the transcribed responses in Mentimeter, Cisco Webex chat box and Webex meeting recording: (1) Adapting to online learning mode; (2) Feeling overwhelmed and increased stress; and (3) Support and guidance during online learning.

3.1 Adapting to online distance learning mode

The first-year students expressed that they were struggling to adapt to online learning, since it is their first time learning via the ODL mode and had no opportunities meeting face-to-face with their peers and lecturers. They highlighted difficulties in managing time and self with additional family commitments.

“It is very difficult as we are in ODL for the first time in the first semester. It is difficult to study (online) in a group and ask friend and lecturers as it has a barrier compare to face-to-face learning. Other than that, at home we have many responsibilities.” C38

“I’m not sure about others but for me, I still struggle in adapting with this online learning especially in terms of time management. That being said, the source of the problem is myself. I can’t really provide a good reason because the problem is myself.” C15

3.2 Feeling overwhelmed and increased stress

Students shared two main issues that led to the feelings of being overwhelmed and increased stress during their online learning. The first issue is on time management and perceived high academic workload, whereas the second concern is about working with problematic group members.

3.2.1 Sub-theme: Feeling overwhelmed and stress managing classes, assignments, deadlines and revisions

The first-year students felt overwhelmed under the time pressure of completing multiple individual assignments prior to Test 1, thus citing the lack of time for revisions.

“I found it hard to revise or catch up with the lectures because there are a lot of assignments that need to be done. The only time that I can actually revise is during test week.” C16

“I stayed home and I need to help my family to do the house chores as well. The assignments burden me so bad. The other subjects’ assignments are really hard for me to do it alone. So, I really don’t have much time to focus on my study for this subject.” C12

3.2.2 Sub-theme: Stress caused by problematic group members

The first year’s students voiced a strong desire to have the option to choose their own members for group work, instead of being assigned by lecturers. They were aware of problems arising from incompatible group members, citing poor work attitudes or the lack of commitments during group work.

“I hope students can choose their own group members for PBL and lab report like the lecturer did for PBL2. As for other subjects, some students experience problems, like not all members did their work when the group members assigned by lecturers.” C27

“It is stressful when we need to do the assignment in groups and the marks that will be given also based on the group. I have problems which my certain group mates did not participate actively and just did the assignment for only 5%.” C47

“I am thankful for this subject - we can actually choose our team members for all the assignments. But for other subjects, the group members are all picked by lecturers and I need to face the same problematic members. I cried a lot because of this.” C48

3.3 Support and guidance during online learning

Students expressed their need for live lectures, recording and past-year questions to be made available to support and guide their studies since this is their first year. They were aware of the isolated feeling of studying online and asked for a more responsive chat group to support their learning.

“I’m having a problem during a lecturer’s class. Because we just discussed what we do not understand instead of going through the notes given. Not recorded too.” C29

“I think that the one thing that has been so hard on me is that for three weeks - there was no lecture conducted and only Q & A sessions. I believe for me, it is really ineffective to study chemistry by ourselves.” C11

“There is a problem when someone ask something in the group, there will just ‘seen’ the chat and no response at all. This makes someone gives up asking something. And I hope that there will be more (students/lecturers) who want to answer the chat - because it can make someone (feel) down.” C28
DISCUSSION

This study aims to explore perceptions and experiences of the first-year undergraduate pharmacy students in the first semester of ODL during the Covid-19 pandemic. The loss of a familiar routine and support expected from the traditional, face-to-face teaching and learning has disrupted a sense of stability and coherence in the lives of faculty members and students. Many had no choice but to rapidly adapt to the online learning environment.

1. Adapting to online distance learning mode

The preliminary findings of this study revealed that the first-year undergraduate pharmacy students still find it difficult adapting to ODL—almost three months into the semester. For students, it is their first time at the university. Navigating through new courses and meeting new course mates and faculty members on online platforms can be exciting, awkward, nervous and intimidating at the same time. Without prior experience in ODL, we speculate that they were unfamiliar with what to expect and how to behave in an online learning environment. This is consistent with a recent study on pharmacy student ODL experience at a college of pharmacy in Saudi Arabia [11] that showed the preparatory phase students have lower level of perceived preparedness. It also appears that even though students were aware “... the source of the problem is myself...” (C15), they were having trouble finding the right balance in managing their time and learning, thus took longer than expected in adapting to ODL.

2. Feeling overwhelmed and increased stress

Online learning from home presents many unique and unexpected challenges to the first-year students [1,27]. They found themselves having to split their attention, time and spaces constantly. Dealing with daily house chores, family responsibilities, negotiating living spaces, the internet and devices with siblings and parents (all learning and working from home) while attending live lectures, completing assignments and studying for tests and exams are amongst the realities of ODL. Coping with the learning environment at home is not limited to pharmacy students; Barrot et al. [28] highlighted similar challenges experienced by college students at the National University in the Philippines.

Managing increased responsibilities at home, in addition to unfamiliarity and uncertainties in academic activities may have resulted in the first-year students feeling stressed and overwhelmed in meeting the demands of academic workload [2,27,29]. Having regular open and receptive communications among faculty members and students could help reduce scheduling conflicts, thus easing the stress related to academic workload.

Moreover, the lack of face-to-face interactions may make it more difficult for the first-year students to develop trust and bonds with new group mates and faculty members. Vietnamese researchers found that, in an online learning environment, students were “more passive and less motivated to work with people who they did not know in person before.” [18]. Students expressed concerns about working with difficult and uncooperative group members, which further added to the stress associated with remote learning. Therefore, it is understandable that they would prefer to choose their own group members rather than having them assigned by faculty members. These underscore the need to incorporate teaching and social presence in an existing course.

Teaching and social presence can be illustrated further using the “Phases of Engagement” model which progressively builds trust and understanding between students via collaborative assignments, and facilitates faculty members in promoting active learning in an online course [19,20]. For example, to actively engage students online, the faculty at D’Youville School of Pharmacy in the United States used the breakout room feature in Zoom to conduct medicinal chemistry assignments in Pharmacotherapeutics IV: Endocrinology course. The faculty moved from one breakout room to another to observe students’ progress and collaborations, and facilitate their discussions [30]. Such intervention fosters better peer-to-peer learning, thus providing support to help reduce stress related to ODL.

3. Support and guidance during online learning

Students expressed difficulties studying alone, and being without much support from peers and faculty members during ODL. These would consequently lead to negative emotions, namely feeling neglected, isolated and demotivated; these are not uncommon [11,31], considered as barriers in online learning [17], and ways to overcome these feelings have been explored [32]. Students do require on-going contact and support in order to deal with these negative emotions, which are viewed as taboo in Asian cultures and therefore, might be left unspoken. Gradual introduction of collaborative group work in online courses may help mitigate negative emotions in constructive ways [20].

The crucial role of a faculty member’s teaching presence is highlighted in the comment below:

“I think that the one thing that has been so hard on me is that for three weeks - there was no lecture conducted and only question and answer (Q & A) sessions. I believe for me, it is really ineffective to study chemistry by ourselves.” C11

Being new to the topics, the first-year students would find it difficult to learn new concepts on their own. They seem to
expect faculty members, as subject matter experts, to provide direct instruction on the topics. Garrison et al. [21] asserted the importance of teaching presence as ‘the binding element’ for social and cognitive presences in a virtual learning environment. During the pandemic, a consistent theme in the faculty’s approaches at Monash University’s Faculty of Pharmacy and Pharmaceutical Sciences was ensuring some synchronous touchpoints to create and sustain community-building between students and instructors [33]. For example, students were sorted into smaller groups for synchronous sessions where Zoom’s breakout rooms were used for role-play patient counselling [34].

Additionally, conducting live lectures could open up learning opportunities and correct misconceptions. Although during live lectures internet connectivity may be disrupted and students attend the live lectures as passive learners, they would still be able to ‘feel’ and hear their peers participating in the virtual atmosphere. This creates a sense of belonging among the students, thus promoting social and cognitive presence as outlined in the COI framework. The recordings of the live session allowed the students to follow up on the missing parts and reflect on the live lecture discussion or activities [33]. All these are important in providing support and guidance to students.

In the light of the Covid-19 pandemic and its long-term ramifications, administrators and faculty members must be acutely aware of the first-year students’ learning concerns and needs [13,14,28,33,34]. To address the issues, we suggest the following interventions:

a. Conduct briefings to assist students in becoming acquainted with the pharmacy programme in the first semester of online learning.

b. Connect them with their mentors, peers and seniors via virtual ice-breaking sessions.

c. Introduce programme-wide monitoring of academic workload deadlines to reduce submission conflicts.

d. Incorporate online collaborative pedagogical interventions e.g., the use of virtual breakout rooms with think-pair-share, jigsaw and escape room activities.

e. Place greater emphasis on teaching and social presence in the first-year courses.

f. Training of educators on designing online courses and technology in teaching to achieve the course learning outcomes through active learning.

Together, these could bring about a desirable ‘snowball effect’ that builds and sustains trust, alleviates academic stress, and fosters meaningful online learning experiences for first year undergraduate pharmacy students, thus, would be extendable to other courses.

The results of this study should be interpreted in light of some limitations. The responses were gathered from a group of first year undergraduate pharmacy students who volunteered to share their views and experiences in ODL. The students are from only one university in Malaysia. This could limit the transferability of the study’s findings. Our research, however, has shed light on students’ online learning issues that are consistent with larger studies [10,11,28,35]. This indicates that our findings may be transferable to some extent.

**CONCLUSION**

We conducted this study to gain some understanding of learning issues encountered by the first-year undergraduate pharmacy students during the Covid-19 pandemic. Thematic analysis of students’ responses led to three broad themes of learning issues and concerns during ODL: (1) Adapting to online distance learning mode; (2) Feeling overwhelmed and increased stress; (3) Support and guidance during online learning. This study suggests that the first-year students experienced difficulty to adapt and manage their lives and studies during their first semester of ODL. The study also highlights the importance of online teaching presence in realising meaningful outcomes in student learning. The first-year students seem to need direct instruction and institutional support during ODL. A number of interventions are suggested to address the highlighted issues. These will continue to be relevant as the higher education sector re-opens in stages where students would resume their studies in hybrid and ODL modes. Further research is needed to determine the post-pandemic impact of ODL among pharmacy undergraduate students in Malaysia, and perhaps the effect of ODL on the quality of graduates produced.

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**CONFLICT OF INTEREST**

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