Nursing, Health Technician and Midwifery Students' Perceptions of Their First Fully Online Learning Experience During the Covid-19 Pandemic: A Cross-Sectional Study

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Abstract
This paper examines undergraduate nursing, health technician and midwifery students' perceptions of their first fully online learning experiences during the COVID-19 pandemic period. Online learning was a solution for several countries during the COVID-19 pandemic to pursue studies and protect students. Understanding nursing students perceptions of their experiences related to the online learning is crucial to achieve effectively online learning objectives. Hence, we conducted a mono-centric cross-sectional descriptive study to examine learner's perceptions of their online learning experiences during this difficult time. This research was conducted among 648 students between 16 March and 16 May 2020 at a public nursing institute in Morocco. STROBE reporting guidelines were used to report findings.
The results are encouraging. Students perceived positively their first fully online learning experience. Surprisingly 58% of participants were satisfied from this learning modality. In contrast, heterogeneous opinions surrounded the credibility/pertinence of online learning assessment. This pandemic period was an opportunity to explore the educational potential of online learning in our context. Hence, our institute is called to reinforce integration of online learning-teaching strategy to meet learner's styles preferences and improve nursing education quality.

Keywords: Online Learning, Students' Perceptions, Nursing Students, COVID-19

Introduction

The current Corona-virus disease (COVID-19) appears for the first time in Wuhan (China) in late December 2019. Since the world health organization (WHO) had declared the COVID-19 outbreak to be a pandemic on March 12, 2020 (WHO, 2020), by March 18, 2020, 107 countries had adopted national school closures (Viner et al., 2020). There is a consensus that the current pandemic (SARSCoV-2) has severally altered lives around the world. The novel SARS-CoV-2 pandemic context has shifted in how students are educated. During this difficult time, online learning has become the norm. In Morocco, the pre-licensure nursing, health technician, and midwifery program is administered entirely face-to-face.

In order to ensure continuing nursing education, The High Institute of Nursing Professions and Health Techniques (ISPITS) has been mobilized to allow students to pursue their theoretical courses online. Since March 16, 2020, once the decision to suspend face-to-face courses was made, an ad-hoc vigilance committee was formed to consider potential solutions. Note that the majority of our instructors and students were not educated on a particular learning management system (LMS) in our setting. Furthermore, the urgency of this change encourages teachers to use whatever technical and pedagogical resources they choose to achieve the goals of their online learning programs. Effectively, one of the most challenge aspect of online learning is that learners and teachers lack the knowledge and skills needed to use an online LMS for the first time (Georgouli et al., 2008). Instructors were assisted by a computer science doctor-engineer during this transition to help them solve the challenges they encountered using the technical methods they selected. After two weeks of guidance, online learning has taken the right path. The main goal was to ensure that pedagogical support was provided in the best possible ways to achieve curriculum learning outcomes.

Online learning saves time and money, provides a variety of multimedia supports to accommodate different learning styles. It also allows students to learn from anywhere, and respects their learning rhythms. By moving the instructional model from teacher-centered to learner-centered pedagogy, e-learning innovations are reshaping the educational paradigm (Oye et al., 2014). According to Parsazadeh et al. (2013), the performance determinants in online education are the accessibility of students and instructors, student satisfaction, and online pedagogical resources. The success or failure of graduate students who use emerging technology in their studies is unclear (Park et al., 2010). A systematic analysis by Childs et al. (2005) identifies a number of barriers to online learning, including institutional and financial issues, software and hardware use and attainability, support usability, pedagogical methods, and instructors' digital skills. Learners must feel that these technological learning systems are serving them to reproduce face-to-face learning experiences and meet their pedagogical demands (Sharma et al., 2016). In other terms, optimize their effort and performance expectancies (Venkatesh et al., 2003). Then, their digital skills, knowledge and familiarization with online learning platforms predict the effectiveness of learning management systems implementation (Lee et al., 2013). Indeed, in online learning, a user-friendly and intuitive platforms design is more important that is well maintain and enhance student motivation, as well as the integration of self-evaluation functionalities to ensure that learners are properly, intentionally engaged in the learning process (Xu and Mahenthiran, 2016).

Students' perceptions of their online learning are critical indicators of any online learning strategy's success (Pahinis et al., 2007; Redmond et al., 2018). The objective of this study is to examine nursing, health technician and midwifery students' perceptions of their first fully online learning experiences during the COVID-19 pandemic.

Methods

Design

Across-sectional quantitative mono-centric survey design was undertaken using an online questionnaire survey to describe students' perceptions of their first fully online learning experiences.

Setting

This study was conducted in a large Moroccan public institute of nursing, health techniques and midwifery that offers 12 pre-licensure degree programs: general nursing, intensive and critical care, anesthesia, mental health, neonatal, radiology, laboratory, social assistance, physiotherapy, community health, orthoprosthetist and midwifery. The whole theoretical modules are delivered in solely face-to-face teaching-learning modality.

Participants

This research was open to all institute students (N=643) enrolled in the second, fourth, and sixth semesters. Students were assured that their grades would not be impacted by their involvement or non-participation in the survey to enable them to participate and that their participation is voluntary. With an 89 % response rate, 573 students agreed to participate in the questionnaire survey.

Measurement: Questionnaire Survey

A quantitative descriptive analysis was used in this original study. Data was collected via a questionnaire survey exploring the students' perceptions of their first fully online course, using Kirkpatrick's four-level assessment model (first level: reactions) (Kirkpatrick, 1998), using an online survey. This instrument consists of 7 multiple-choice close-ended questions. The first two questions interest the technical aspects of their online learning experiences and concern digital devices and platforms used during online learning. Each query included six to nine statements. Students' online learning background, interactivity, assimilation of learning goals and satisfaction are all addressed in the last five questions. These questions were answered on a 5-point Likert scale, with responses ranging from "Very dissatisfied" to "dissatisfied," "very satisfied," "satisfied," and "Very satisfied." The characteristics of the participants (gender, age, specialty, and pre-licensure semester) were also recorded. Data was collected over four days in May 2020.

Data Analysis

Quantitative data analyses were carried out using Microsoft Excel software. Descriptive statistics were used to report demographic characteristics of the participants. Mean (M), standard deviation (SD) and range were used to describe participant age. Proportions (%) aimed to describe gender and number of participants per specialties, semester and to present students' perceptions of the different aspects of online learning surveyed.

Ethical Improvement

Eligible students were contacted by email and informed that answering the survey implied their consent to participate in the study. They were told about the study's goals and that their information would be kept private. A password was used to restrict access to the online survey's registered data. We have also obtained the nursing institute approval to recruit students to this study.

Results

Participants' Characteristics

The research included 573 of the 648 eligible students, and their data was analyzed. The demographic profile of the participants is presented in Table 1. The responders are mainly young (mean age: 21) Moroccan female students (88%). 36% of participants are undertaking the pre-licensure degree in general nursing and 48% of them were in the second semester.

Characteristic	Value
Age	
M (SD)	20.64 (2.42)
Range	18-44
Gender	
Female n (%)	505 (88%)
Male n (%)	141 (12%)
Semester	
Second	278 (48%)
Fourth	190 (33%)
Sixth	105 (18%)
Specialties	
General nursing	246 (43%)
Anesthesia	30 (5%)
Intensive care	40 (7%)
Neonatal	22 (4%)
Mental health	41 (7%)
Midwifery	22 (4%)
Radiology	42 (7%)
Laboratory	31 (5%)
Social assistant	9 (2%)
Community health	80 (14%)
orthoprosthetist	10 (2%)
N	573 (100%)

Table 1: Participant's Characteristics
M: mean; SD: Standard deviation.

Students' Online Learning Experience

The online learning background experience has shown that 58% of participants (n= 332) did not experienced a fully online learning modality before this period of COVID-19 (Fig. 1).

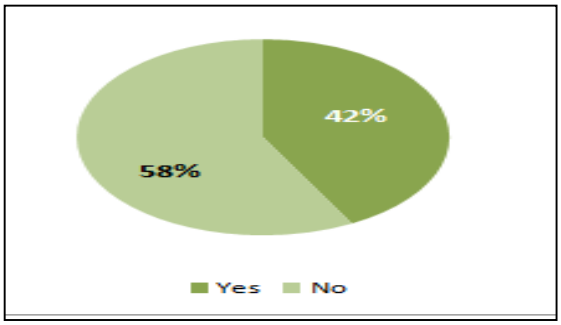

Figure 1: Students' E-Learning Background

Digital Devices Used to Attempt Online Learning Courses

75% of participants used Smartphone to achieve their online course. The laptop was employed by 19% of them.

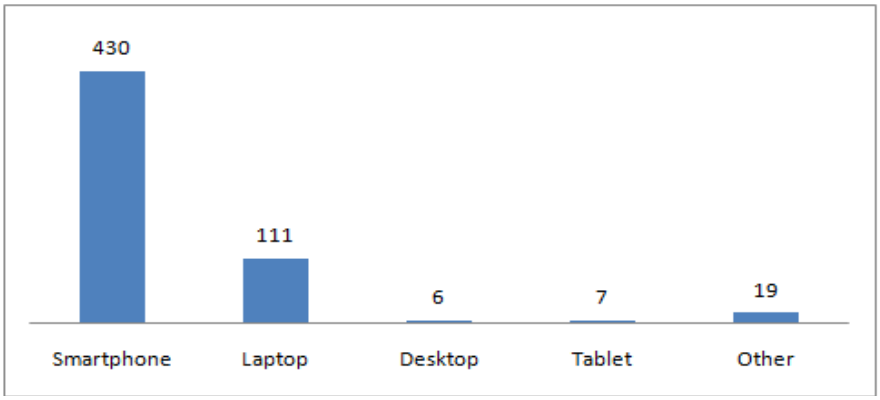

Figure 2: Digital Devices Used by Students During Inline Learning

Online Learning Courses Interactivity

High levels of agreement 71% (n=405) were associated students' online learning modality interactivity. Otherwise, 29% (n=168) of students found the distance learning deserved by institute pedagogical staff non interactive (Fig. 2).

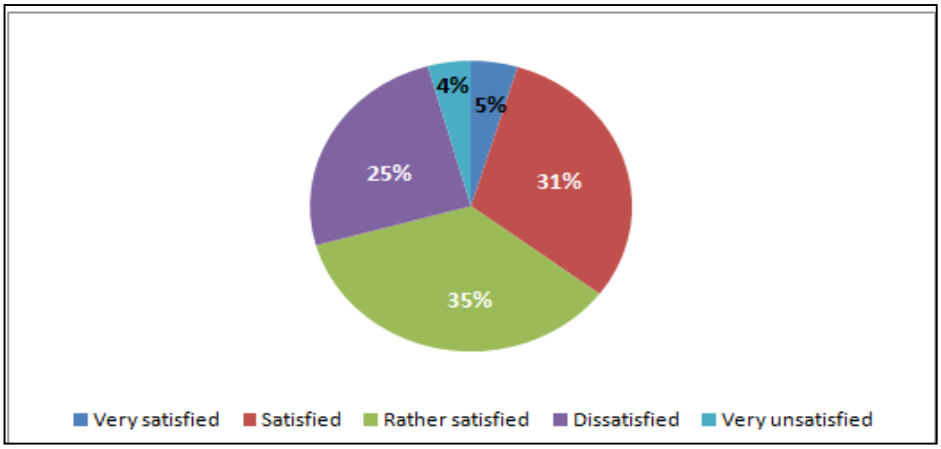

Figure 3: Online Courses Interactivity Students' Satisfaction

Online Learning Platforms

The most platforms used by students during their online learning activities were WhatsApp social network with a rate of 43%, Google Classroom come in the second position with 32% of participants (Table 2). The combination "WhatsApp + Google Classroom" was used by 47% of participants. These same platforms (especially WhatsApp with 77%) were commonly used by students to communicate and share didactic content between them (Table 2 and 3). Zoom with 63% was the most videoconference platform used to attempt synchronous audio-visual didactic content (Table 4).

Learning Platform	%
WhatsApp	43
Google Classroom	32
WhatsApp + Google Classroom	47
ZOOM	18
SimClasse	3
Others	5

Table 2: Platforms Used for Online Learning

Communication Platform	%
WhatsApp	77
Googleclassroom	16
Facebook	3
Gmail	1
Others	3

Table 3: Platforms Used by Students to Communicate and Exchange Didactic Content

Videoconference Platform	%
Zoom	63
SimClasse	14
Whatsapp	6
GoogleMeet	7
Facebooklive	3
WebEx	2
Others	5

Table 4 : Videoconference' Paltforms Used During Students' Online Learning

Online Learning Objectives Assimilation

69% (N= 395) of our participants assimilated the didactic material and were satisfied from this education modality in terms of comprehensibility and assimilation of learning objectives. On the other hand, 31% of them didn't assimilate the content via this teachnig modality (Figure 3)

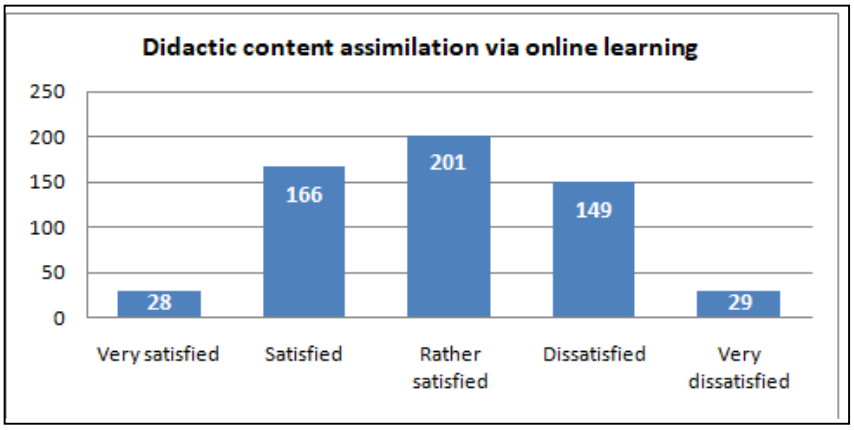

Figure 4: Students'assimilation of Didactic Content in Online Learning

Online Learning Students' Satisfaction

58% (332) of participants were satisfied from online distance learning modality (Figure 4).

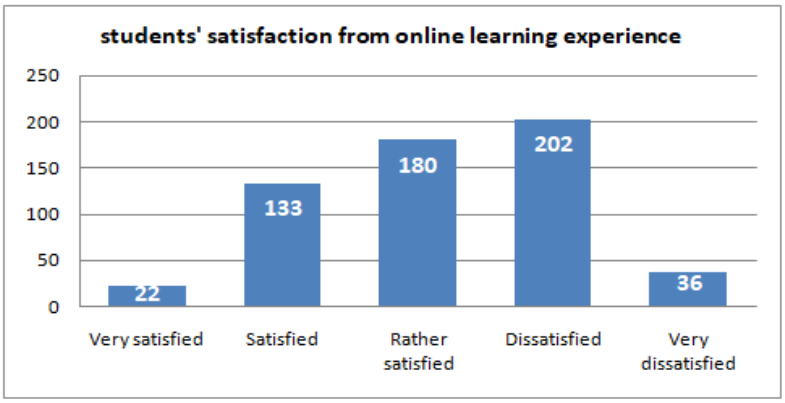

Figure 5: Online Learning Students' Satisfaction

Online Learning Evaluation Credibility and Pertinence

33% (190) of participants were partially agreed about pertinence and credibility of online learning assessment; while 18% (133) of participants thought that online learning evaluation exams are credible and pertinent. In contrast, 44% (250) had stated their disagreement with this assessment modality (see Fig. 6).

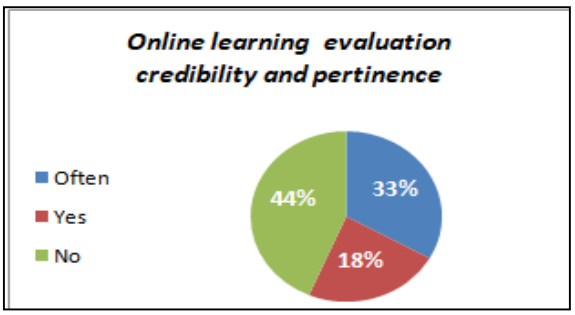

Figure 6: Students' Online Learning Evaluation Credibility and Pertinence

Discussion

Nursing curricula are approving centered-learner active strategies including online courses and blended learning, to achieve and match different learners' styles and programs objectives (Gaston and Lynch, 2019). This study provides an insight into the nursing, health technician and midwifery undergraduate students' perceptions of their first fully online learning during the COVID-19 pandemic. The foremost surprisingly result of this original study has shown that students have been overall satisfied from the online learning, despite it was their first fully online learning experience. Effectively, 58% of participants were satisfied despite of a lack in theirinstitutional online learning policy in addition to the socioeconomic conditions in a developing country especially in the COVID-19 time witch can impair online learning quality experience (Horzum, 2015). The reported level of satisfaction may be linked to the constructivist approach learner-centered based of online learning education (Dorrian and Wache, 2009). The accessibility and ease use of online tools are foremost crucial for the successful online learning experience (Alhomod and Shafi, 2013). This resultcan also be explained especially thatstudents of this generation used commonly some online platforms (particularly social networks) to learn and communicate outside the institutional framework. Generally, the most popular learning management systems (LMS) are Moodle and Blackboard(Timms, 2017). Both of them were not used by teachers to attempt online learning. A large part of participants (77%) relied on social network like "WhatsApp"to which they are familiar and GoogleClassroom (16%) to attempt their online courses. 47% of them employed a combination of these platforms.Effectively, Combination of different didactic supports (videos, pictures and voice) and offering amobile learning method (anytime, anywhere) has made WhatsApp a convenient, effective and student-friendly tool for online learning (Gon and Rawekar, 2017; Maske et al., 2018). This result is supported by Asiry(2017)study within students preferred social network to attempt their online learning activities.

This study also highlighted that online learning interactivity was positively perceived. 71% of students stated that the online courses were interactive using this social network platform. Indeed, instructors acknowledge the necessity to enhance socialinteraction for thegoal of knowledge construction as it stated by constructivist pedagogical approach (Abrami et al., 2011).Development of teaching techniques that enhance learner's engagement and instructor immediacy is a fundamental in online learning interactivity(DellAntonio, 2017; Gaston & Lynch, 2019). In fact, when there is poor interactivity, learning styles preferences of students and the teaching techniques are mismatched, teaching become tiresome and non-interactive (Park et al., 2010). Learner engagement is a fundamental facet and trend of online learning education (Bonk, 2016; Centner, 2014).Thus, this research has demonstrated the effectiveness of social networks in the achievement of online learning courses interactivity.LMS constitute the heart technology platforms for the online learning(Xu and Mahenthiran, 2016). In addition, some studies stated that LMS offering structured interactive tools including wiki or discussion forum are necessary to improve student-centered active learning (Berkstresser, 2016; Park et al., 2010; Zou et al., 2015). In our context, no LMS was used in the online learning students' experiences.

Concerning online learning content assimilation, 69% of participants arrived to understand/assimilate the didactic content via this teaching/learning modality. This level of assimilation can be linked to interactivity and social constructivism elicited by this learning modality improving students' engagement and meeting their rhythm and preferences styles of learning.Effectively, studentsinteract with didactic content, for example by having discussions with others,in order to anchorlearning experience meaning (Nicol, 2006). Furthermore, the

assimilation of didactic content and enhanced interactivity improve students' self-efficacy. Thus, 58% of participants were overallsatisfied from this learning method.

Assessment of students' learning outcomes is critical and must integrate course design and instruction (Muller et al., 2019; Oh et al., 2020).In relation to participants' online learning assessment perceptions, 55% of students surveyed revealed that online learning evaluation is overall credible and pertinent.

Limitation

Although the aim of qualitative research is not to generalize (Morse, 2016).This was a study in a single site which limits generalizability. The study relied on students' self-reporting (perceptions) their online learning experiences which can influenced by students' previous digital skills and personality. Objective measures of online learning were not collected and compared with student's perceptions. Furthermore, including focus groups in order to learn more about students' online learning perceptions would strength study results.

Bias

All students have not the same digital skills, internet flow (3G/4G/ Wifi). Thus, it may influence the quality of online learning, consequently the quality of online learning experience. Furthermore, instructor's availability and digital competencies, instructional design (how didactic material is sequenced and presented) may influence learners' interactivity and assimilation.

Conclusion

Participants had a positive perception of their first online learning experiences overall. This study present a general picture of the learners' perceptions of the online learning experienced during the COVID-19 pandemic. Through preliminary results, it seems encouraging to review our institute education curriculum and start to integrate online learning strategies in nursing education curriculum. A large multi-centric research is merited to investigate instructors' perceptions of online learning strategy. The goal is to inform curriculum instructional designers and instructors on futures online learning strategies to meet learners' styles preferences and curriculum objectives. Thus, further large studies will enable to construct an overarching picture on this teaching-learning strategy and ensure that next institutional policies and resources reinforce more the online learning in the nursing and midwifery curriculum.

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