



UNIVERSITI PUTRA MALAYSIA

***ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG UNDERGRADUATE
NURSING STUDENTS IN PUBLIC UNIVERSITIES IN MALAYSIA
THROUGHOUT COVID-19 PANDEMIC***

NURIN IRDANIE BINTI JAFRIDIN

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**THESIS SUBMITTED TO THE FACULTY OF MEDICINE AND HEALTH
SCIENCES, UNIVERSITI PUTRA MALAYSIA THESIS AS PARTIAL
FULFILLMENT FOR THE DEGREE OF BACHELOR OF NURSING**

SEPTEMBER 2022

ABSTRACT

ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG UNDERGRADUATE NURSING STUDENTS IN PUBLIC UNIVERSITIES IN MALAYSIA THROUGHOUT COVID-19 PANDEMIC

Nurin Irdanie Jafridin, Rosna Abdul Raman, Hasni Idayu Saidi

Background: The global outbreak of the COVID-19 pandemic has entirely halted the educational process, hence shifting from face-to-face classroom teaching to electronic learning (e-learning). Virtual mediums were applied for undergraduate nursing students to cope with educational loss that occurred when universities remained closed due to Movement Control Order (MCO). The attitude on the practice of e-learning among undergraduate nursing students may influence their performance in the learning process. **Objective:** To determine the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia during COVID-19 pandemic. **Methods:** This study's design is a cross-sectional study. A convenient sampling method were used to recruit undergraduate nursing students from International Islamic University Malaysia (IIUM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), and Universiti Teknologi Mara (UiTM) Puncak Alam. The questionnaire comprises two parts which were socio-demographic and attitude on the practice of e-learning. **Data Analysis:** SPSS version 27.0 was used for data entry and analysis. Descriptive analysis, independent T-test and One-way independent ANOVA were used to evaluate the resulting data. **Results:** A total of 142 respondents had participated in the study. The findings in this study showed that the total mean score is 3.64 (SD=0.51) which indicated for favorable attitude on the practice of e-learning. Besides, 46.5% (66) had favorable attitude, 34.5% (49) had unfavorable attitude and 19% (27) had neutral attitude. The analysis shows there is significant association between socio-demographic characteristics (gender, residence, and gadgets/devices used in e-learning) with attitude on the practice of e-learning ($p \leq 0.05$) but none for age, year of study, monthly family income (RM), and gadgets/devices used in e-learning ($p > 0.05$). **Conclusion:** The result obtained in this study showed that majority respondents had favorable attitude on the practice of e-learning during this pandemic. Hence, to improve the clinical skills, knowledge, and attitudes of undergraduate nursing students for the preparedness of the COVID-19 pandemic, appropriate e-learning strategies must be implemented.

Keywords: attitude, e-learning, undergraduate, nursing, COVID-19

ABSTRAK

SIKAP TERHADAP AMALAN E-PEMBELAJARAN DALAM KALANGAN PELAJAR PRASISWAZAH KEJURURAWATAN DI UNIVERSITI AWAM DI MALAYSIA SEPANJANG PANDEMIK COVID-19

Nurin Irdanie Jafridin, Rosna Abdul Raman, Hasni Idayu Saidi

Latar Belakang: Wabak global pandemik COVID-19 telah menghentikan sepenuhnya proses pendidikan, justeru beralih daripada pengajaran secara bersemuka dalam kelas kepada pembelajaran elektronik (e-pembelajaran). Medium maya digunakan oleh pelajar prasiswazah kejururawatan untuk mengatasi kehilangan pendidikan yang berlaku apabila universiti masih ditutup akibat Perintah Kawalan Pergerakan (PKP). Sikap terhadap amalan e-pembelajaran dalam kalangan pelajar prasiswazah kejururawatan boleh mempengaruhi prestasi mereka dalam proses pembelajaran. **Objektif:** Untuk menentukan sikap terhadap amalan e-pembelajaran dalam kalangan pelajar prasiswazah kejururawatan di universiti awam di Malaysia semasa pandemik COVID-19. **Metodologi:** Reka bentuk kajian ini adalah kajian keratan rentas. Kaedah persampelan mudah digunakan untuk merekrut pelajar prasiswazah kejururawatan dari Universiti Islam Antarabangsa Malaysia (UIAM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), dan Universiti Teknologi MARA (UiTM) Puncak Alam. Soal selidik mengandungi dua bahagian iaitu sosio-demografi dan sikap terhadap amalan e-pembelajaran. **Analisis Data:** SPSS versi 27.0 digunakan untuk kemasukan dan analisis data. Analisis deskriptif, *independent T-test* dan *one-way independent ANOVA* digunakan untuk menilai data. **Keputusan:** Seramai 142 responden telah mengambil bahagian dalam kajian ini. Dapatan kajian ini menunjukkan bahawa jumlah skor min ialah 3.64 (SD=0.51) yang menunjukkan sikap menggalakkan terhadap amalan e-pembelajaran. Selain itu, 46.5% (66) mempunyai sikap yang menggalakkan, 34.5% (49) mempunyai sikap tidak menggalakkan dan 19% (27) mempunyai sikap neutral. Analisis menunjukkan terdapat perkaitan yang signifikan antara ciri sosio-demografi (jantina, tempat tinggal, dan gajet/peranti yang digunakan dalam e-pembelajaran) dengan sikap terhadap amalan e-pembelajaran ($p < 0.05$) tetapi tiada untuk umur, tahun pengajian, pendapatan keluarga bulanan (RM), dan gajet/peranti yang digunakan dalam e-pembelajaran ($p > 0.05$). **Kesimpulan:** Keputusan yang diperolehi dalam kajian ini menunjukkan majoriti responden mempunyai sikap yang menggalakkan terhadap amalan e-pembelajaran semasa pandemik ini. Oleh itu, untuk meningkatkan kemahiran klinikal, pengetahuan dan sikap pelajar prasiswazah kejururawatan untuk kesiapsiagaan menghadapi pandemik COVID-19, strategi e-pembelajaran yang bersesuaian mesti dilaksanakan.

Kata kunci: sikap, e-pembelajaran, prasiswazah, kejururawatan, COVID-19

ACKNOWLEDGEMENTS

First and foremost, with the name of Allah, the Most Gracious and Most Merciful, I like to thank God the Almighty for giving me the blessing and opportunity in conducting and completing this research work of mine successfully.

I would like to express my deep and sincere gratitude to my research supervisor, Puan Rosna Abdul Raman and my research co-supervisor, Dr. Hasni Idayu Binti Saidi for giving me the opportunity to do research and providing invaluable guidance throughout this research process. Their dynamism, guidance, comments, and motivations have deeply inspired me and are highly appreciated. They have taught me the methodology to carry out the research and to present the research works as clearly as possible. It was a great privilege and honour to work and study under their guidance.

I am extremely grateful to all my family members, especially to my parents, Siti Ainon Muhamad and Jafridin Salim for their love, prayers, and continuing support to complete this research work. In addition, I would like to thank my fellow friends for the discussions, for the sleepless night we were working together, and for their help and guidance in completing my studies

Finally, thank you for the cooperation and kindness from all of you. I can only pray to the Almighty and may Allah give you all the best in return. My heartfelt thanks.

DECLARATION (STUDENT)

I hereby confirm that:

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DECLARATION (SUPERVISORY AND CO-SUPERVISOR)

Declaration by Supervisor and Co-supervisor

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter consist of background of study, problem statement, significant of study, research objectives, research questions, research hypotheses, and operational definition.

1.1 Background of study

In December 2019 in Wuhan, China, 2019 novel Coronavirus (COVID-19) was initially found and proclaimed on 11th of March 2020 by the World Health Organization (WHO) as a global pandemic due to the rapidly increasing positive cases. The first Movement Control Order (MCO) was announced on the 16th of March 2020 by Tan Sri Muhyiddin Yassin, which was the Malaysian Prime Minister at that time, to halt the spread of this infectious disease in Malaysia as it reached 533 positive COVID-19 cases (Sukumaran, 2020). The emergence of a global outbreak of the COVID-19 pandemic undoubtedly affected education institutions worldwide including public universities in Malaysia. As a result, the Malaysian Higher Education Ministry has decided that all teaching activities at all universities and other higher education institutions must be conducted online to prevent another COVID-19 outbreak (Palansamy, 2020).

Due to the MCO, where the pandemic has entirely halted the educational process, the education institutions are moving towards electronic learning (e-learning). The advancement of information technology (IT) nowadays surely provides an effective solution to the educational sector's needs by shifting from face-to-face

classroom teaching to online learning. The COVID-19 pandemic has provided us with an opportunity to develop a framework for the implementation of digital learning (Dhawan, 2020). To maintain the continuity of classes for both practical and theory-based lectures, virtual mediums such as Google Meet, Zoom, Webex, or other online platforms were applied in a wide variety of educational fields. Nursing students in their final semesters, who were about to shift from nursing students to registered nurses, were highly worried that online learning might hinder their readiness upon graduation. This is necessary such that the designated courses are needed to finish according to the academic calendar, as well as coping with educational loss that occurred when universities remained closed due to the MCO.

1.2 Problem statement

Online teaching was not a common teaching method in schools and universities in this existing education system before the pandemic. COVID-19 pandemic has given a stressful impact on many students especially nursing students as they need to practice skills not only theoretical but practical too, and it is limited to be learned through e-learning (Mashaal et al., 2020).

A study by Oducado and Estoque (2021) discovered that their undergraduate nursing students considered having online learning during the COVID-19 outbreak to be stressful (44.4%) and very stressful (47.2%). However, a study by Opeyemi et al. (2019) found that most of their nursing students perceived that online learning platforms are easy to use due to the flexibility and easy access to the recorded lectures.

To gain a better understanding of how undergraduate nursing students engage in e-learning, in-depth research is required. Observing nursing students' attitude

towards e-learning can help to identify various implementations of e-learning as well as help in developing education policy in making sure e-learning is compliant.

Thus, this study was conducted to determine the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

1.3 Significant of the study

The benefit of this study is to encourage undergraduate nursing students to use e-learning as a self-preparedness in nursing education for the emergency-like situation such as the COVID-19 pandemic in the future. The findings were served as the baseline information that is beneficial to the nursing students for improvement which will be made in developing more user-friendly with minimal technical barriers in using e-learning. Hence, the virtual experiences of practical sessions can be carried out effectively and efficiently for the undergraduate nursing students which eventually can contribute to better academic performance.

1.4 Research Objective

Based on the study by Ali et al. (2016), their study was to determine the attitude of nursing students toward e-learning. Thus, the questionnaire were used to measure the nursing students' attitudes toward e-learning including 6 domains (Perceived usefulness; Intention to adapt e-learning; Ease of e-learning use; Technical support; E-learning stressors; E-distant use of e-learning).

1.4.1 General objective

The main objective of this research is to study the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

1.4.2 Specific objective

- i. To determine the socio-demographic characteristics of undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.
- ii. To determine the attitude on the practice of e-learning (perceived usefulness; intention to adapt e-learning; ease of e-learning use; technical support; e-learning stressors; e-distant use of e-learning) among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.
- iii. To investigate the association between socio-demographic characteristics and attitude on the practice of e-learning (perceived usefulness; intention to adapt e-learning; ease of e-learning use; technical support; e-learning stressors; e-distant use of e-learning) among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

1.5 Research question

- i. What is the socio-demographic characteristics of undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic?
- ii. What is the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic?
- iii. What is the association between socio-demographic characteristics and attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic?

1.6 Research hypothesis

- i. Favourable attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.
- ii. There is no significant association between socio-demographic characteristics and attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic with a p-value greater than 0.05 ($p > 0.05$).

1.7 Operational definition

- i. Attitude

Attitude means that learners' positive or negative feelings of participating in e-learning activities through computer use will directly influence their behaviour to use online learning to study. Different students have different insights on online learning. Understanding students' attitudes towards e-learning by using the 6 domains (perceived usefulness, intention to adapt, ease of learning, technical support, e-learning stressors, and e-distant use of e-learning) can help to determine the extent to which students utilize the e-learning system. In this study, the respondent's attitudes will be evaluated or measured regarding the e-learning implementation towards their nursing education syllabus.

ii. E-Learning

Electronic learning (e-learning) is a form of learning that mixes traditional classroom teaching with electronic resources or media. It is mostly based on the implementation of computers and the Internet. In this study, undergraduate nursing students use the e-learning method to continue their education syllabus due to the universities did not approve yet the traditional face-to-face learning method because of the COVID-19 pandemic.

iii. Undergraduate

Undergraduates are students who have graduated from high school and have been admitted to a university or college but have not yet completed their degree studies. In this study, undergraduate students refer to all public university students who are currently doing their bachelor or degree in the college or university.

iv. Nursing students

A nursing student refers to a person who is engaged in a professional nursing or vocational nursing program. The nursing student learns the theoretical and practical training that is specifically provided to nurses with the purpose to prepare them for their duties as upcoming nursing care professionals after graduation. In this study, nursing students refer to all students taking Bachelor of Nursing program in the public university in Malaysia.

v. Public university

A public university is an academy that obtains most of its funding from the state government. This study refers to 7 main public universities around Malaysia that offer Bachelor of Nursing programs. Meanwhile, in this study, only 4 out of 7 universities are involved which are International Islamic University Malaysia (IIUM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), and Universiti Teknologi Mara (UiTM) Puncak Alam.

vi. COVID-19 pandemic

The SARS-CoV-2 virus causes Coronavirus Disease (COVID-19) which is an infectious disease. When an infected person coughs, sneezes, or speaks, the virus can be transmitted from their mouth or nose in tiny liquid particles. This study, it is conducted during the period of the COVID-19 pandemic.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter consist of literature review regarding e-learning, undergraduate nursing students' attitude on the practice of e-learning, the prevalence of attitude globally and locally, socio-demographic characteristics, attitude on e-learning (perceived usefulness, intention to adapt e-learning, ease of use, technical support, learning stressor, and e-distant use of e-learning), and conceptual framework

2.1 Electronic Learning (E-Learning) or Online Learning

In this globalization era, the role of information technology (IT) in the education sector is very significant, especially during the COVID-19 pandemic, where this global outbreak of COVID-19 has changed the scenario of the education sector when governments ordered for the schools and universities to change from traditional face-to-face class to e-learning (Masha'al et al., 2020).

E-learning can be referred to as online education, which uses high usage of electronic resources such as the internet, computers, and smartphones as an alternative method for coping with the education loss so it can be in the same timeline as the syllabus. These electronic devices are used to gather and spread the knowledge gained. According to Dhawan (2020), e-learning can be labeled as an aid that can make the process of teaching-learning be more student-centered, which is highly innovative and flexible to the students and educators. Students can learn to be independent and communicate with the educators, as well as other students in this environment where they will only interact by using online learning (Singh & Thurman, 2019).

Online platforms play a big role in e-learning conversion from traditional face-to-face classes where many students can admit to the class up to at least 40 to 50 students depending on each online platforms' capacity. Moreover, if the students missed out on their online classes, they could watch back the recorded lectures and, get quick feedback regarding assignments from their lecturers. Active discussion with both parties can make the educational process runs smoothly through virtual, and the advancement of IT also makes the lectures to be available on both smartphones and laptops too (Basilaia et al., 2020). It is proved that this educational transition required students, educators, and faculty to fully use their existing technological capability.

2.2 Undergraduate Nursing Students' Attitude on the Practice of E-Learning

According to the study by Thapa et al., (2021), almost half of the nursing students had positive impressions of the effectiveness of e-learning stating that it saves time and allows them easier access to learning materials than traditional methods. Yet, most respondents stated that e-learning will never entirely replace other types of teaching and learning in which face-to-face communication between a student and a teacher plays a significant role in the educational process. Communication facilitates learning, assists students in achieving their objectives, and develops the relationship between student and educator, all of which contribute to a pleasant learning experience. However, online communication lacks the use of body language and facial expression, which are essential in helping educators connect with their students and vice versa (Mohammad Alawamleh et al., 2020).

In agreement with the recent research conducted among nursing students in Saudi Arabia, 71.4 percent of respondents had prepared for the lesson by accessing the internet and blackboard at least ten minutes before the online lecture. The students

were aware of the importance of attending all online lectures might be the possible explanation for this. Despite this, more than half of the students did not pay enough attention to the lecture for the entire duration of the lecture; this could be due to a lack of engagement during an online session. This finding agrees with Baczek et al., (2021), who discovered that when implementing e-learning courses, there was a lack of an interactive approach.

Meanwhile, a study conducted in the same year, by Terzi et al., (2021), shown that most nursing students gave positive responses to questions concerning e-learning, but they agreed that this method of learning was not appropriate for nursing education and basic nursing skills as they must perform mandatory practical skills in the actual hospitals, not just on a virtual screen. This finding is consistent with research conducted in countries such as China, Malaysia, and Singapore, where students perceived e-learning as less appealing due to the practical restrictions of learning in a clinical area.

As claimed by Sasmal and Roy (2021), their study indicated that, although nursing students participated in e-learning sessions during the pandemic, they still prefer traditional teaching sessions over e-learning as seen by their indifferent attitude and individual responses to each question. Most of the respondents agreed that e-learning helped them to grasp theoretical sessions (70.03%), while 83.79% agreed that they missed their interactions with patients. The students still can get their online notes or rewatch the lectures even if they cannot attend online classes due to connection problems. As matter of fact, they can always revise back and refer to the recorded lectures to catch up with the theoretical classes.

However, there is also a study that shows 77% of students have a negative impression of e-learning (Abbasi et al., 2020). This finding matches Mohamed Abd El-Hamed Diab and Fouad Elgahsh (2020), who found that their nursing students had negative attitudes towards e-learning which is the overall 61.6%. These students have the highest percentage of negative attitudes toward using e-learning, and the possible reason could be they are new to college, so it is difficult for them to adjust to a new environment. In their former school years, most of the first-year students also did not have experience using the Internet or online class, hence they are not familiar with virtual learning. The result could be viewed as a sort of the students' resistance and opposition to a quick shift from traditional face-to-face class to distance learning.

2.3 Prevalence of Attitude on The Practice of e-learning Among Undergraduate Nursing Students Globally and Locally.

A study conducted in the Philippines, observed that 52.2% of the nursing students had a positive attitude toward e-learning, and 91.3% of them intend to use e-learning tools if available (Roquios et al., 2022). The result was similar to the other studies conducted in United Kingdom, where the nursing students were strongly positive about the use of multimedia technologies in e-learning (Kirkwood, 2003). A similar finding was found in another study as well, where they stated that nursing students had a favourable attitude toward e-learning in South Africa (Akimanimpaye & Fakude, 2015).

Furthermore, it was found that nursing students in Taiwan had positive attitudes toward e-learning as they tend to agree that the Internet learning model is a feasible new way of learning which has certain strengths such as flexibility in time, space, and conveniences (Yang, 2016). According to a study shown that most nursing students in South-West Nigeria demonstrated positive attitudes and willingness toward

online learning, although the actual use rate remains low (Oladele et al., 2022). Major barriers encountered by them were the poor electricity supply, unstable internet network, and financial constraints. In a study conducted in Nepal to assess the attitude of nursing students, 58.9% considered e-learning useful for nursing education, even though many of the students had internet problems and technological issues (Thapa et al., 2021).

Despite the fact of the positive attitude toward e-learning, there was also a negative attitude regarding it among nursing students. A study conducted among undergraduate nursing students in India shown negative attitudes toward online classes, whereas female students had a more favourable attitude towards online classes than male students (Gaur et al., 2020). The finding is similar to the study conducted in Nigeria, where was a negative attitude and perception toward e-learning among the nursing students, as the majority disagreed with the idea of preferring e-learning (Ukpong, 2020). Factors that influence the attitudes of students include the cost of internet connectivity, mode of learning, lack of power supply, indiscipline, and lack of motivation and commitment by students.

Locally, based on study by Raheema and Khair (2019), they found that the 96% of International Islamic University of Malaysia (IIUM) nursing students shown positive attitude towards the use e-learning, web-based learning, and online learning, meanwhile 11% have negative attitude towards it. 72.5 % of nursing students acknowledge that the use of technology is an essential skill for them in e-learning, while 67% strongly agreed that they like using technology in learning.

Although e-learning environments are becoming much more mainstream, the gap of the study is the limited number of studies was found to assess on Malaysian undergraduate nursing students' attitudes about e-learning. As a result, assessing the potential effects of e-learning methods in the context of local nursing education during the COVID-19 pandemic is crucial. The nursing students will consider e-learning to be very useful and are willing to adapt it.

2.4 Socio-demographic Characteristics on Attitude of E-Learning Practice

2.4.1 Gender

Males, according to Ashong and Commander (2012), may have a benefit over females in the online classroom due to their perceived skill, comfort, and involvement with computers. Korlat et al. (2021) discovered that more men than women use terms like "computer freak" or "I like computers" to define themselves in affiliation to computers. Meanwhile, according to Kollmayer et al. (2018), from infancy onwards, technology and action are always associated with male activities, whereas female activities are associated with caring and beauty. In terms of gender disparities, Alghamdi et al. (2020) discovered that females had considerably better online learning outcomes than men because females had better self-regulation. Following that, research in Malaysian universities revealed that female students use e-learning portals more than male students (Shahzad et al., 2021), and their study said that female students comprehend the relevance of e-learning portal usage better than male students.

2.4.2 Residence

Vyas et al. (2010) reported that they effectively improved clinical training in a rural area of India by utilizing mobile e-learning technology in research done in India. The mobile e-learning applications were created to supplement clinical training and give assistance to students in remote regions with limited resources. However, according to

Siddiqui et al. (2021), urban students have fewer internet and electricity problems than rural students, even though both groups of students face the same barriers, such as internet and electricity problems, learning privacy concerns, and stress during online submission of assignments and tests. Those who live in urban and semi-urban regions value education more than people who live in rural areas because they have better access to education services and necessary resources in the area to assist e-learning implementation (Tamta & Ansari, 2017).

2.4.3 Family Income

According to Olum et al. (2020), opinions about e-learning vary by projected monthly income in this research, and a majority of undergraduate students obtain financial help from their parents or guardians. The COVID-19 outbreak affects students from all socioeconomic backgrounds, with no exceptions for low-income households. Students from low-income households must compete against all equipped students from high-income homes, with themselves (Mansor et al., 2021). According to another research performed in Malaysia (Hawati & Jarud, 2020), underprivileged households during difficult times would prioritize putting food on the table above acquiring digital equipment and gaining access to the internet for e-learning.

2.4.4 Gadgets/devices used in e-learning

Students who utilized a computer for online education performed better on exams than those who used a smartphone (Clark et al., 2021). E-learning entails gaining and sharing information via electronic resources such as the Internet, computers, and smartphones (Olum et al., 2020), and students with personal computers easily have access to widely used word and PowerPoint applications, which are commonly required for coursework assignments. While 95% (204) of the students had cellphones, up to 39% did not have access to a computer or laptop. 3421 pupils (93%) had a

smartphone, 2311 students (63%) had a tablet, and 3043 students (83 %) had a laptop or desktop computer, according to research (Baticulon et al., 2021).

2.4.5 Source of the internet

As shown by Baticulon et al. (2021), most of their students in the Philippines subscribed to a postpaid internet service, and used prepaid mobile data to access the internet. Furthermore, in another study, 154 (44%) nursing students were required to utilize mobile data for online lessons (Rana Khagi et al., 2021), and their nursing students also used internet access to run online. This finding is equivalent to research done in Chitwan, Nepal, where students had access to the internet for online classes (Sharma et al., 2021).

2.5 Attitude on the practice of e-learning

2.5.1 Perceived usefulness of e-learning

Perceived usefulness refers to users' subjective impressions of how using specific technology can improve their performance (Davis, 1986). Perceived usefulness is important and linked to the system's productivity and efficacy since it helps users do better in class. Meanwhile, Lin, Chen, and Fang (2010), perceived usefulness in the context of e-learning is explained as the extent to which users think that e-learning can help them accomplish their teaching and learning objectives. In the educational context, students' perspectives are crucial since they are the primary users of the e-learning process. Therefore, students are frequently encouraged to offer their views on the work and their feelings about the e-learning because the way students perceive a teaching approach has a significant impact on their engagement in learning and class involvement (Suprihatiningrum, 2016). Prasetyo et al. (2021) They discovered that students' perceptions of e-learning, their consistency with face-to-face learning, and teachers' responsiveness had a major beneficial impact on their perceived usefulness.

They concluded that general impression has a vital influence in determining a greater level of perceived usefulness of e-learning. Research has shown that the greater the perceived usefulness of new technology, the more positive the attitude toward the new technology will be, resulting in a greater desire to engage in e-learning (Victoria et al, 2018: Um, 2021). Those who find e-learning to be useful are more likely to use it as a mode of learning.

2.5.2 Intention to adapt e-learning

The readiness and choice to perform a certain behavior (acquire and accept innovation) may be referred to as students' intention to adapt e-learning. The greater the desire to execute the behavior, the more likely the behavior will be performed. Students' attitudes based on experience or individuals' worldviews may influence their thought on technology that helps form decisions. Therefore, the success of e-learning is greatly reliant on students' willingness to adapt this new IT-based delivery mode. Factors that influence students' readiness to adapt and use e-learning are crucial for its effectiveness (Kattoua, Al-Lozi & Alrowwad, 2016), which is highly dependent on students' willingness to adapt and accept technology in the new learning process. According to Sannegadu et al. (2018), they discovered that university students' perceptions regarding e-learning had a significant impact on their future intention to use it. Hence, it is important to provide students with training and familiarity with the new system so that they can assess the ease of use and benefits of e-learning, which will encourage them to adapt it.

2.5.3 Ease of use e-learning

The extent to which individuals believe that utilizing a certain system would save them time and effort is known as perceived ease (Davis, 1986). It may also be described as the degree to which individuals assume technology is simple to use. This is one of the

most important aspects of a student's acceptance of e-learning. This is because if students perceive that e-learning is easy to use, they will be more motivated to continue using e-learning and have a favourable attitude toward it. Easy access to e-learning (simplicity of obtaining specific topics, system functionality, and learning materials (a variety of activities) may influence how a student engages with e-learning (Keržič, 2019). Additionally, Gong, Xu, and Yu (2004) reported that perceived ease of use had a significant and direct influence on students' attitudes as well as perceived usefulness.

2.5.4 Technical support

Technical support refers to a range of services aimed at assisting people that are having difficulties operating a computer. Students' ability to use technology for e-learning is clearly affected without competent technical support and maintenance of the most recent hardware and software (Valdez et al., 2011). According to (Gray et al., 2003), they stated that the success of the e-learning process is based on the skills and quality of technical support available to users. Furthermore, it also aids in the development of required information and abilities for students to follow the new learning approach and demands. It is crucial to establish an environment that supports students' learning of new technology. Nawaz et al. (2012), suggest that the universities' constituents get technical and human resource support for the continuous technology integration, and to prepare information technology (IT) workers for the new digital environments that the students are facing now (Qureshi et al., 2009) which is effective for the e-learning process. Hence, it was necessary to construct a reliable infrastructure with all the necessary facilities for e-learning (Pfeffer, 2004). Installation, operation, and maintenance of technical equipment (including software), network administration, and network security are all essential skills for e-learning technical specialists. Therefore,

without on-site technical support, students may lose a lot of time and money due to e-learning system failures.

2.5.5 Learning stressor of e-learning

The discomfort and anxiety generated by various obstacles to academic learning are referred to as learning stressors. Extreme amounts of stress can impede productivity at work and result in poor academic performance, hindering the learning process. According to Kabir et al. (2021), they found that nearly 91% of students reported moderate to a higher level of perceived e-learning stress. Likewise, Lazarevica and Bentz (2020) stated that the students who participated in e-learning reported higher levels of stress than those who participated in traditional campus-based learning. As a result, mental readiness is vital for effective e-learning. Additionally, several studies reported that the students may not find e-learning beneficial owing to unanticipated readiness issues such as a lack of confidence, lower technological abilities, or poor internet connection (Kirkup & Prümme, 1997; Naidu, 2021). Next, students sometimes run into issues when their residence is not suitable for e-learning. Also, because the internet signal at home is weak and easily dropped, students' stress levels may be affected (Kabir et al., 2021). Consequently, efforts should be taken to alleviate stress and improve the e-learning process during the COVID-19.

2.5.6 E-distant use of e-learning

Online learning is convenient and may even reach rural and remote locations (Dhawan, 2020). In terms of transportation, lodging, and the total cost of institution-based learning, it is a considerably less expensive way of education. Next, e-learning enables students to observe a variety of flexible learning methods to attend courses with a significantly decreased demand for travel (Chang, 2016) because they are not required to go outdoors to attend class. Part-time and full-time students can actively engage in

online degree courses from any area or region, creating a better resource for experience and learning for those who are traveling or relocating (Radu, Radu, and Croitoru, 2015). Many students benefit from the integration and usage of e-learning since it allows them to continue their education from any location.

All the 6 domains (Perceived usefulness; Intention to adapt e-learning; Ease of e-learning use; Technical support; E-learning stressors; E-distant use of e-learning) used to measure the nursing students' attitudes toward e-learning.

2.6 Conceptual Framework

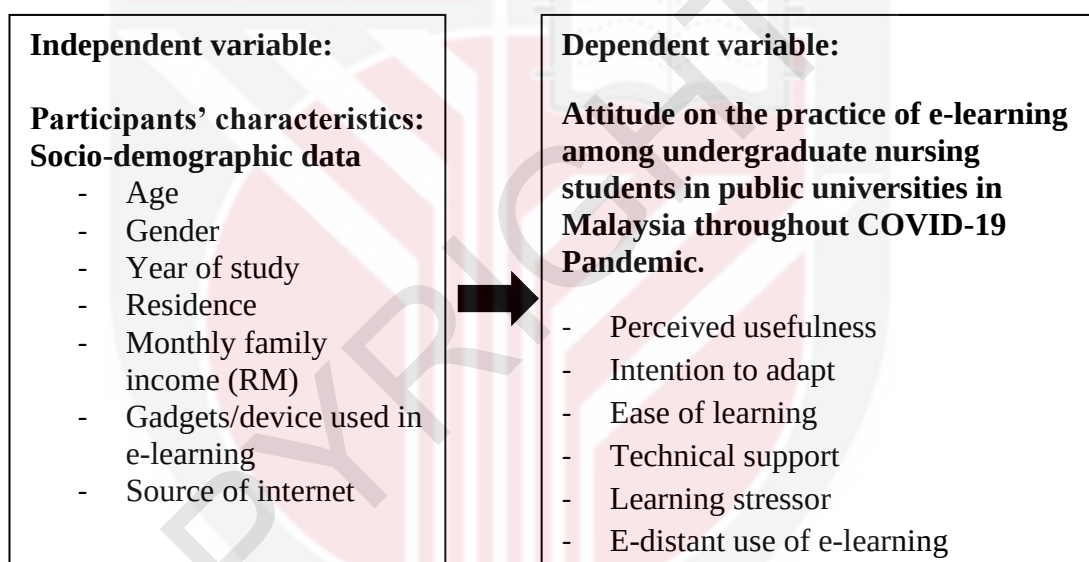


Figure 2.1: Conceptual framework attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

The socio-demographic data is collected from 292 undergraduate nursing students from 4 selected public universities in Malaysia including age, gender, year of study, residence, monthly family income (RM): below 40% (B40), middle 40% (M40), and top 20% (T20), gadgets/device used in e-learning, and source of internet. This cross-

sectional study will be conducted by using one set of questionnaires which consists of the standard Likert scale measuring the attitude of nursing students regarding e-learning together with the socio-demographical data that has been mentioned previously. All participants will receive an assessment questionnaire through physical copies, while email and WhatsApp via Google Form online survey since now our country is having a pandemic disease which will affect the physical contact to conduct the study survey with the participants.



CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter consist of study design, study location, study sampling, sample size estimation, sampling method and subject recruitment, subject criteria, study instrument, pre-test, data collection procedure and flowchart, data analysis, ethical consideration.

3.1 Study design

A cross-sectional study design was used to study the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. This study design was convenient as it enabled the researcher to collect data from a large pool of participants and compared many different variables at the given time. Also, it was cost-effective as it requires little or no additional cost for the researcher and the study was easy to conduct (Wang & Cheng, 2020).

3.2 Study location

There are seven public universities in Malaysia that offer the program of Bachelor of Nursing. However, this study only involved four public universities, which were International Islamic University Malaysia (IIUM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), and Universiti Teknologi Mara (UiTM) Puncak Alam. These universities were chosen using simple random sampling method.

Currently, most of the undergraduate nursing students were staying in their universities' hostel instead of their hometown so that they can went to their clinical practice in community clinic or hospital. Even so, their theory classes were conducted online.

3.3 Study sampling

3.3.1 Study population

The sampling unit for this research study came from 855 undergraduate nursing students in the chosen four public universities. All nursing students from Year 1 until Year 4 participated in this study.

3.3.2 Study duration

The duration of the study lasted around 12 months (October 2021 to September 2022). While the duration for data collection was between 3 months from June 2022 to August 2022.

3.4 Sample size estimation

The sample size (n) calculation was determined according to the objectives of the study. The sample size was calculated within 5% of the true prevalence with 95% confidence. The estimated total number of undergraduate nursing students in four selected public universities that offered the program of Bachelor of Nursing were recruited in this study was 855 which considered as the population size, N.

Thus, the sample size for this study was calculated using Raosoft sample size calculator. The formula used to determine the sample size was derived from the following format (www.raosoft.com).

$$n = N \times x / (x + N - 1)$$

where

$$x = z^2 p (1 - P) / d^2$$

Where:

n = sample size

N = population size which was 855

z = value corresponding to a 95% level of significance = 1.96

p = proportion of students 50%

$q = (1 - P) = (1 - 0.5) = 0.5$

d = margin of error, 5%

Based on the formula above, the calculation of the sample size was calculated as,

$$x = (1.96)^2 (0.5) (1 - 0.5) / (0.05)^2$$

$$x = 384.16$$

$$x \sim 384$$

$$n = N + x / (x + N - 1)$$

$$n = 855 + 384 / (384 + 855 - 1)$$

$$n = 265.2019386$$

$$n \sim 265$$

Therefore, the number of participants needed for this study was 265 undergraduate nursing students from four selected public universities in Malaysia, who met the eligibility criteria.

By considering 10% for non-response, missing data, unavailability of subjects, or refusal to participate, the sample size of this study was calculated below:

$$n = 265 + (265 \times 10/100)$$

$$n = 291.5$$

$$n \sim 292$$

In conclusion, after considering 10% dropouts, the final sample size of the participants needed in this study was 292 subjects.

3.5 Sampling method and subject recruitment

To select samples, researcher used a simple random sampling method which was coin-tossing as researcher did not had time to choose respondents due to limited time and resources. This method involved all seven public universities in Malaysia that offered Bachelor of Nursing and each university had a 50% probability chance to be selected. During this sampling, a witness was present to avoid bias. The university that had a “head” was chosen to participate in this study, while the university that had a “tail” was excluded in this study. As a result, four out of seven public universities were selected, which were International Islamic University Malaysia (IIUM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), and Universiti Teknologi Mara (UiTM) Puncak Alam.

To reach the participants, the researcher used convenience sampling method. Convenience sampling method was a type of non-probability sampling method where the sample was taken from a group of people easy to contact or reach. Due to the researcher had time and source limitations, the data collection by using convenience sampling method was easy and accessible in the study. It can easily recruit respondents to participate by distributed printed questionnaire papers and shared the link on social

media. The respondents happened to be the easiest to access as participants in a study. Random sampling reduced efficiencies and took more time than convenience sampling.

By using convenience sampling, the printed questionnaire paper and google form link were shared with ease of access to all the full-time undergraduate nursing students enrolled in the IIUM, UKM, UPM, or UiTM Puncak Alam that ranged from Year 1 until Year 4. The sick undergraduate nursing students were the exclusion due to their health status which made them cannot participate fully in the e-learning. E-learning applied worldwide recently due to COVID-19 pandemic that started in late December 2019, thus more than four years of study were not applicable to participate. The eligible undergraduate nursing students fitted all the criteria of this study participated and answered the questionnaires.

The researcher got the list of undergraduate nursing students' names, emails, and phone numbers from the four public universities' authorities, then the questionnaires were randomly distributed to the first respondents and others by using printed questionnaire papers and a shared link in the form of Google Form online survey through face-to-face, email, and WhatsApp.

Generalization was limited since nonprobability sampling was used (Jager et al., 2017). They found that one of the most common examples of convenience sampling was the use of student volunteers as study participants. Additionally, the key advantages of convenience sampling were that it was cheap, efficient, and simple to implement.

3.6 Subject criteria

3.6.1 Inclusion criteria:

- i. Undergraduate nursing students enrolled in IIUM, UKM, UPM, or UiTM Puncak Alam.
- ii. Year 1 until Year 4 undergraduate nursing students.
- iii. Full-time students.

3.6.2 Exclusion criteria:

- i. Currently under medical leave for a serious condition.
- ii. More than four years of study as undergraduate nursing students.

3.7 Study instrument

3.7.1 Questionnaire

A self-administered questionnaire which consisted of 2 parts, Part 1: Socio-demographic information, Part 2: Standard Likert Scale measuring the attitude of nursing students regarding e-learning, was provided to the undergraduate nursing students at the four selected public universities. Necessary permission to use the instrument was obtained from one of the authors of both studies. The authors developed the questionnaire through literature review where Part 1 was developed by the authors themselves (Thapa et al., 2021). Part 1 was modified by the researcher to suit the respondents' characteristics for socio-demographic data in this research study. Part 2 was adapted from previously published studies done in Pakistan (Ali et al., 2016) with permission.

The authors, Thapa and colleagues (2021) conducted pre-testing to evaluate the internal consistency of the instrument's reliability in 10% (48 nursing students) of the same type of estimated population in a similar setting. Likert Scale was used to measure the attitude of undergraduate nursing students towards e-learning. It was also

designed to evaluate respondents' attitudes, opinions, or perceptions. The questionnaires were distributed in the English version.

- Part 1: Sociodemographic data

Age, gender, year of study, residence, monthly family income (RM), gadgets/devices used in e-learning, and source of internet were asked in the socio-demographic data.

- Part 2: Standard Likert Scale Measuring the Attitude of Nursing Students

Regarding e-learning

A modified shorter version of the Likert scale questionnaire (Ali et al., 2016) for measuring attitude towards e-learning was used in this study to measure the nursing students' attitude toward e-learning. Permission was obtained from the study's author. Perceived usefulness (1–18), intention to adapt e-learning (19–27), ease of e-learning use (28–35), technical support (36–39), e-learning stressors (40–42), and distant use of e-learning (43–46) were the six domains of the Likert scale.

3.7.2 Scoring system

Scores vary from 1 to 5, with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. There were 46 items in the questionnaire, 26 of those were positive items, while another 20 were negative items. The total score varies from 46 and 230. Negative items were reversely scored. The mean score of the five-point Likert scale was considered to assess the overall attitude. The overall mean score was categorized as favorable/positive attitude (agree or strongly agree), neutral attitude (neutral), and unfavorable/negative (disagree or strongly disagree). The range used to describe the mean score Likert scale questionnaire (Chanwaiwit, 2018) was shown in Table 1. The median or mean score was calculated but the raw score was used to do statistical analysis throughout this study.

Table 3.1: Scoring system regarding the study of attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

	Score	Mean Score Range 5-Point Likert Scale	Mean Score Interpretation
Strongly Disagree (SD)	1	1.00 – 1.80	Unfavourable/ Negative attitude
Disagree (D)	2	1.81 – 2.60	
Neutral (N)	3	2.61 – 3.40	Neutral attitude
Agree (A)	4	3.41 – 4.20	Favourable/ Positive attitude
Strongly Agree (A)	5	4.21 – 5.00	

3.8 Pre-test

Pre-test was an essential phase of research process, it was a small-scale preliminary study which the goal is to explore the significant elements in a main study. The pre-test was carried out to 29 undergraduate students from other programmes in Faculty of Medicine and Health Science, UPM which was about 10% from the final sample size (N=292). The questionnaire was distributed to them. Pre-test in this study was essential in providing the preliminaries of the research project and to test the feasibility of the study instruments.

3.9 Validity and reliability

The data were collected in pre-test and tested for reliability and internal consistency using the Cronbach's alpha correlation coefficient. In a study conducted in Nepal (Thapa et al., 2021), the reliability Cronbach's alpha score of the modified shorter version of the Likert scale for the 6 domains: perceived usefulness, intention to adapt,

ease of learning, technical support, e-learning stressors, and e-distant use of e-learning was reported to be 0.75, 0.74, 0.70, 0.61, 0.79, and 0.71, respectively. The Cronbach's alpha values α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good level (Bland & Altman, 1997). Hence, the instrument was acceptable to be used for the research.

To maintain the validity and reliability of the questionnaire as it was not applied yet in Malaysia setting, hence for reliability, a pre-test by researcher was conducted using 10% from the actual sample size. The findings were analyzed by using Statistical Packages for Social Sciences (SPSS) version 27.0 to get the values of Cronbach alpha (α). The questionnaires had been validated for face validity by the researcher's supervisor.

3.10 Data collection procedure and flowchart

The questionnaires were distributed to participants through face-to-face, email, and WhatsApp within 3 months (June 2022 until August 2022) of the study duration. The researcher identified the eligible respondent and distributed the printed questionnaire papers and the shared link of the Google Form online survey for undergraduate nursing students in four selected public universities to answer the questionnaire. The first page consisted of information regarding the study and denoted to complete the Participant Information sheet to ensure the participants met the inclusion and exclusion criteria of the study.

The printed questionnaire papers were distributed face-to-face and collected again after the respondents finished answering them. The informed consent was also in the same printed questionnaire paper to give the respondents an introduction about

the research and got their consent before proceeding to participate in the study. Informed consent in the online survey was provided to serve as proof that all the data taken remained confidential and were not being exposed to the other party. In the google form, the participants had to click on the button after they read through the information and met all the criteria to provide their willingness to join this study. Consent was automatically obtained when the participants clicked and submitted the online survey. Next, all data and answers were saved and updated in the researcher's Google Drive account. To maintain confidentiality, the password of the Google Drive account was only available and accessible to the researcher only and protected with a password.

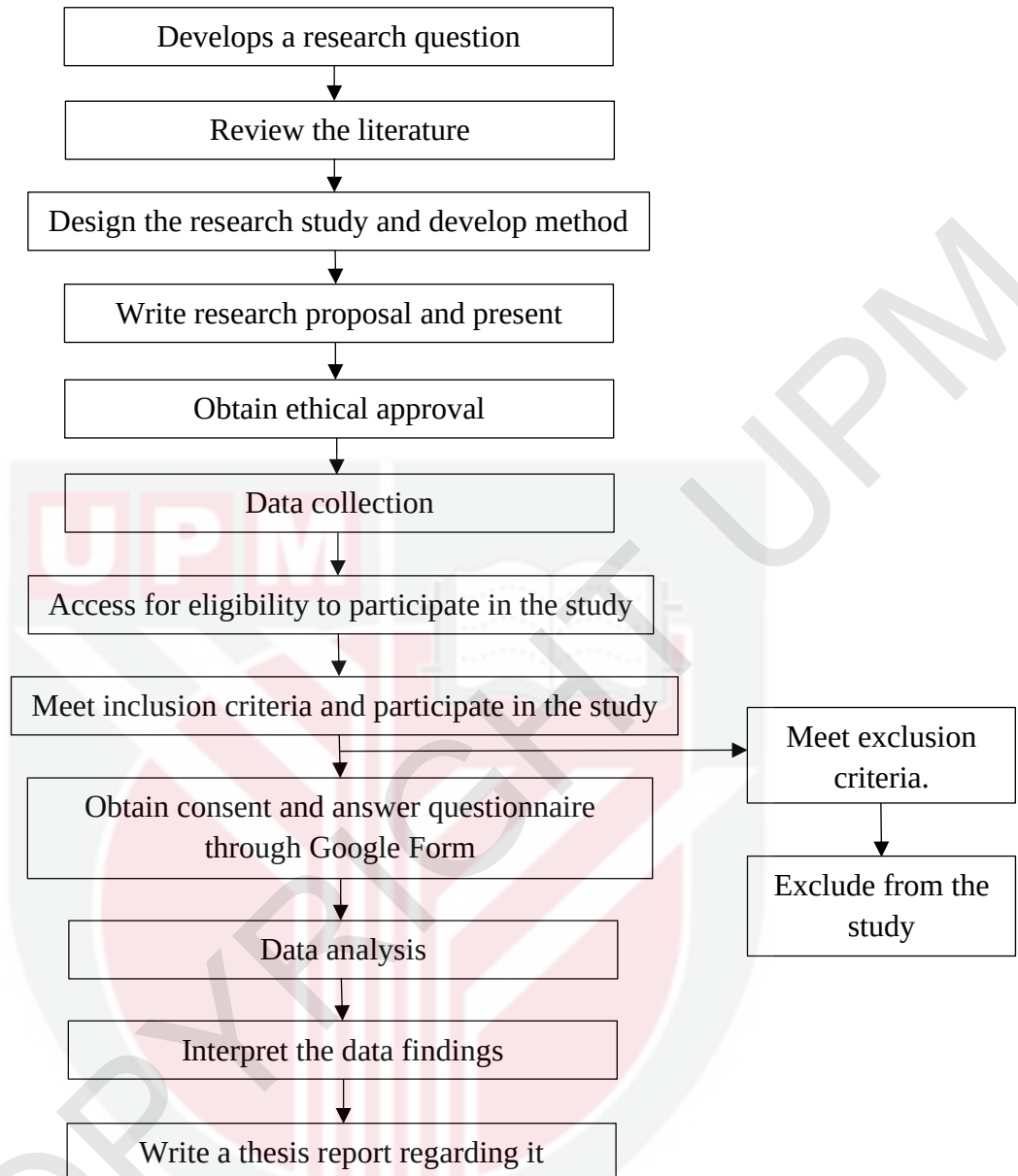


Figure 3.1: Study flowchart of attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

3.11 Data Analysis

Data were collected within 2 months (July 2022 until August 2022) and analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 27.0 for Windows. All the data were recorded in SPSS for descriptive and inferential analysis.

Table 3.2: Socio-demographic data

SOCIO-DEMOGRAPHIC DATA			
Objectives	Variables	Type of variables	Statistical measurement
To determine the socio-demographic characteristics of undergraduate nursing students.	Age	Categorical	Frequency and percentage
	Gender	Categorical	Frequency and percentage
	Year of study	Categorical	Frequency and percentage
	Residence	Categorical	Frequency and percentage
	Monthly family income (RM)	Categorical	Frequency and percentage
	Gadget/device used in e-learning	Categorical	Frequency and percentage
	Source of internet	Categorical	Frequency and percentage

Table 3.3: Descriptive statistics

DESCRIPTIVE DATA			
Objective(s)	Variables	Type of variables	Statistical measurement
To determine the attitude on the practice of e-learning among undergraduate nursing students.	Attitude on the practice of e-learning	Continuous	Mean and standard deviation

Table 3.4: Inferential statistics

Inferential Analysis				
Dependent Variable	Type of data	Independent Variable	Type of data	Statistical Measurements
Attitude on the practice of e-learning	Continuous	Participants' socio-demographic characteristics: • Gender • Source of Internet	Categorical (two only)	Parametric: Independent T-Test Non-parametric: Mann-Whitney Test
Attitude on the practice of e-learning	Continuous	Participants' socio-demographic characteristics: • Age • Year of study • Residence • Monthly family income (RM) • Gadgets/devices used in e-learning	Categorical (more than two)	Parametric: One Way Independent ANOVA Non-parametric: Kruskal-Wallis Test

3.12 Ethical consideration

Ethical approval was incredibly significant as it was used to protect all people involved in the research: the researcher, the participants of the research, and the university. To conduct this research study, written ethical approval and permission letters were obtained online from the Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia (Ethics Committee for Research Involving Human Subjects), (JKEUPM) website. Next, all the completed ethical approvals were attached copies of the proposals were sent to the JKEUPM again to inform about this research study.

Researcher also sent permission letters to all the deans' respective faculty of the four selected public universities in this study to get permission and informed them that their undergraduate nursing students participated in this research study as the participants.

Participants in this study were given a participation information sheet and informed consent form that was attached with the questionnaire before joined the study. Both participation information sheets and informed consent forms were shared via printed questionnaire papers and Google Form. The questionnaires distributed through face-to-face, emails and WhatsApp. All the necessary information and sufficient details regarding this study were explained in it, and participants were requested to read and understood it before decided to participate in this study.

Each participation from the respondents were voluntary and they had the option of withdrawing from the research at any moment with no consequences or providing a reason. Hence, if the participants agreed with the terms, they needed to complete the participant information sheet and signed it by ticking the box, clicking, and submitting the online informed consent form to indicate their willingness to take part in the study. Meanwhile, participation information sheets and informed consent forms were signed in the physical questionnaire papers and collected again by the researcher.

All the data obtained were treated as strictly confidential, and the online submitted questionnaire kept in the researcher's Google Drive account which the account was available and accessible only to the researcher. The identification of the participants remained private. Next, the data collected were transferred to the computer that was protected by a password to perform statistical analysis. Obtained data can only be accessed by anyone related to this study which included the researcher, qualified monitors, and auditors.

Furthermore, the data that the researcher gets were transferred to the computer and uploaded to Google Drive that was protected with a password. These data were going to be destroyed permanently after five years of storage in future.



CHAPTER 4

RESULTS

4.0 Introduction

This chapter provides the findings and analysis according to the research objectives. The overall of this study is to find an association between socio-demographic characteristics and attitude on the practice of e-learning among undergraduate nursing students. Sample of 142 respondents were sampled and answered the questionnaire that was distributed during the period of data collection. This accounting 48.6 percent response rate of this study.

4.1 Socio-demographic characteristics of undergraduate nursing students

The data implies that most of the respondents were aged from 20 to 25 years old which is 93.0% thus belonging to the middle age group. The rest of the respondents (4.2%) were belonged to the first age group where the respondents age is below 20 years old. The least age group is above 25 to 30 years old which account for 2.8%.

It is evident from the table that 82.4% of the respondents' gender are female undergraduate nursing students whereas 17.6% of the respondents are male undergraduate nursing students.

From the data, 45.8% of respondents' residence located at semi-urban. The rest of the respondents (38.0%) are belonged to the first residence group where the respondents' residence is urban. The least residence group is rural which account for 16.2%.

The respondents (28.9%) are 4th year undergraduate nursing students, meanwhile the rest of respondents 25.4% are 3rd Year students, 23.9% are 1st year students and lastly 21.8% are 2nd year students.

Table 4.1 shows that majority of respondents' monthly family income in this study are below RM 4,850 (B40) which is 58.5% thus belonging to the first monthly family income group and the rest of the respondents (38%) are from middle monthly family income group between RM 4,851 – RM 10,970 (M40). Meanwhile, the least monthly family income group is above RM 10,971 (T20) which account for 3.5%.

For gadgets/devices used in e-learning of the respondents, majority of them use laptop (62.7%), 19% using mobile/smartphone, 9.9% and 8.5% using computer and tablet, respectively. From the data implies that most of the respondents' source of internet is Wi-Fi (73.2%) and 26.8% is mobile data.

It can be concluded that majority of respondents participated in this study are female undergraduate nursing students, belong to 20 to 25 years old group and are 4th year students. Many respondents' residence located at semi-urban, and their monthly family income is below RM 4,850 (B40). The respondents also majority using laptop as the gadget/device for e-learning and Wi-Fi as the source of internet throughout COVID-19 pandemic.

Table 4.1: Frequency (n) and percentage (%) of socio-demographic characteristics of undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

Socio-demographic characteristics	Frequency, n	Percentage, %
Age		
< 20 years old	6	4.2
20 to 25 years old	132	93.0
> 25 to 30 years old	4	2.8
Gender		
Male	25	17.6
Female	117	82.4
Year of study		
1 st Year	34	23.9
2 nd Year	31	21.8
3 rd Year	36	25.4
4 th Year	41	28.9
Residence		
Urban	54	38.0
Semi-urban	65	45.8
Rural	23	16.2
Monthly family income (RM)		
< RM 4,850 (B40)	83	58.5
RM 4,851 – RM 10,970 (M40)	54	38.0
> RM 10,971 (T20)	5	3.5
Gadget/Device used in e-learning		
Mobile/smartphone	27	19.0
Computer	14	9.9
Laptop	89	62.7
Tablet	12	8.5
Source of the internet		
Wi-Fi (Wireless Fidelity)	104	73.2
Mobile data	38	26.8

4.2 Attitude on the practice of e-learning among undergraduate nursing students.

4.2.1 Perceived usefulness.

The perceived usefulness of e-learning among respondents is depicted in table 4.2.

With a mean score of 4.0, the majority of respondents (74.0%) believed that e-learning can tackle a number of educational problems. More than half (74.7%) claimed that e-learning saves their time, and 70.4% indicated that e-learning makes it easier for them to access additional educational materials. Additionally, most of the respondents (65.5%, 64.1%, 70.4%, and 57.8% respectively) believed that e-learning did help accomplish better results, enhance learner engagement in learning, improve teacher and student interaction, and promote understanding of the concepts.

E-learning was perceived to be helpful in problem-solving by 67.6% of respondents, time-efficient by 61.9%, impactful by 53.5% of respondents, and informative by 62.0% of respondents. 68.3% of respondents indicated that it enabled them to reinforce their knowledge, 70.4% thought that it helped them organize their work, and 75.4% said that it was easy to catch up for missed lectures. 61.9% of respondents agreed that e-learning may effectively replace traditional types of teaching and learning. Moreover, more than half (70.4%) of the respondents believed that e-learning increases their competence to prepare presentations, and 68.3% believed it has improved their ability to do research. Similarly, 67.6% agreed that universities should adapt e-learning for their students. The overall mean score for perceived usefulness was 3.5.

Table 4.2: Distribution of answers to questions in perceived usefulness on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

Statements		Frequency, n (Percentage, %)					Mean $\pm$ SD
		SD	D	N	A	SA	
Perceived Usefulness							3.5 $\pm$ 0.5
1.	E-learning can solve many of the educational problems.	7 (4.9)	12 (8.5)	19 (13.4)	40 (28.2)	64 (45.1)	4.0 $\pm$ 1.2
2.	E-learning saves time.	10 (7.0)	8 (5.6)	18 (12.7)	38 (26.8)	68 (47.9)	4.0 $\pm$ 1.2
3.	E-learning improves access to learning material.	12 (8.5)	21 (14.8)	9 (6.3)	44 (31.0)	56 (39.4)	3.8 $\pm$ 1.3
4.	E-learning helps me to achieve better results.	8 (5.6)	13 (9.2)	28 (19.7)	45 (31.7)	48 (33.8)	3.8 $\pm$ 1.2
5.	E-learning increase learner's engagement in learning.	8 (5.6)	24 (16.9)	19 (13.4)	42 (29.6)	49 (34.5)	3.7 $\pm$ 1.3
6.	E-learning improve teacher and students' interaction.	3 (2.1)	17 (12.0)	22 (15.5)	45 (31.7)	55 (38.7)	3.9 $\pm$ 1.1
7.	E-learning increase my understanding of concept.	8 (5.6)	16 (11.3)	36 (25.4)	43 (30.3)	39 (27.5)	3.6 $\pm$ 1.2
8.	E-learning has created more problems than it solved.	25 (17.6)	71 (50.0)	36 (25.4)	8 (5.6)	2 (1.4)	2.2 $\pm$ 0.9
9.	E-learning is too time consuming to use.	32 (22.5)	56 (39.4)	20 (14.1)	27 (19.0)	7 (4.9)	2.4 $\pm$ 1.2
10.	E-learning has had little impact on me.	25 (17.6)	51 (35.9)	41 (28.9)	14 (9.9)	11 (7.7)	2.5 $\pm$ 1.1
11.	E-learning is as informative as the teacher.	9 (6.3)	14 (9.9)	31 (21.8)	52 (36.6)	36 (25.4)	3.6 $\pm$ 1.1
12.	E-learning will never replace other forms of teaching and learning.	35 (24.6)	53 (37.3)	32 (22.5)	16 (11.3)	6 (4.2)	2.3 $\pm$ 1.1
13.	E-learning help to reinforce my knowledge.	8 (5.6)	16 (11.3)	21 (14.8)	59 (41.5)	38 (26.8)	3.7 $\pm$ 1.1
14.	E-learning help me to organize my work.	7 (4.9)	19 (13.4)	16 (11.3)	54 (38.0)	46 (32.4)	3.8 $\pm$ 1.2
15.	E-learning help me to catch up missed lectures.	7 (4.9)	18 (12.7)	10 (7.0)	46 (32.4)	61 (43.0)	4.0 $\pm$ 1.2
16.	E-learning increase my effectiveness to create presentations.	6 (4.2)	17 (12.0)	19 (13.4)	42 (29.6)	58 (40.8)	3.9 $\pm$ 1.2
17.	E-learning increase my research capability.	7 (4.9)	17 (12.0)	21 (14.8)	44 (31.0)	53 (37.3)	3.8 $\pm$ 1.2
18.	Universities should adapt e-learning for their students.	7 (4.9)	17 (12.0)	22 (15.5)	47 (33.1)	49 (34.5)	3.8 $\pm$ 1.2

4.2.2 Intention to adapt e-learning.

The respondents' intention to adapt to e-learning is displayed in Table 4.3. The majority of respondents (67.6%) stated that using e-learning made them uncomfortable, and almost 70% disagreed that e-learning was a medium for dehumanizing the learning process. The idea of utilizing e-learning was opposed by 62.7% of the respondents, whereas e-learning was favored by 59.2% of the respondents since it minimized social isolation. Nearly 45% of respondents said they had planned to take future e-learning courses, and 45% said they intended to purchase a computer. 58.5% of respondents said they were interested in using e-learning. For 58.4% of students, online learning was enjoyable. 57% of the respondents said they were unsure of what they would do in the absence of e-learning. The overall mean score for the intention to adapt to e-learning was 2.8.

Table 4.3: Distribution of answers to questions in intention to adapt e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

Statements	Frequency, n (Percentage, %)					Mean
	SD	D	N	A	SA	$\pm$ SD
Intention to adapt e-learning						2.8 $\pm$ 0.4
1. E-learning makes me uncomfortable because I do not understand it	40 (28.2)	56 (39.4)	23 (16.2)	17 (12.0)	6 (4.2)	2.2 $\pm$ 1.1
2. E-learning is a de-humanizing process of learning.	39 (27.5)	56 (39.4)	25 (17.6)	13 (9.2)	9 (6.3)	2.3 $\pm$ 1.1
3. I dislike the idea of using e-learning.	39 (27.5)	50 (35.2)	19 (13.4)	27 (19.0)	7 (4.9)	2.4 $\pm$ 1.2
4. I am not in favour of e-learning as it leads to social isolation.	36 (25.4)	48 (33.8)	27 (19.0)	19 (13.4)	12 (8.5)	2.5 $\pm$ 1.2
5. E-learning does not interest me.	47 (33.1)	36 (25.4)	22 (15.5)	25 (17.6)	12 (8.5)	2.4 $\pm$ 1.3
6. I plan to participate in future e-learning courses	14 (9.9)	27 (19.0)	36 (25.4)	41 (28.0)	24 (16.9)	3.2 $\pm$ 1.2
7. I plan to buy a computer to be able to follow lectures notes online	8 (5.6)	17 (12.0)	53 (37.3)	34 (23.9)	30 (21.1)	3.4 $\pm$ 1.1
8. Using e-learning makes learning fun.	11 (7.7)	22 (15.5)	26 (18.3)	52 (36.6)	31 (21.8)	3.5 $\pm$ 1.2
9. I do not know what I would do without e-learning.	8 (5.6)	19 (13.4)	34 (23.9)	48 (33.8)	33 (23.2)	3.6 $\pm$ 1.2

4.2.3 Ease of learning.

Table 4.4 shows the ease of e-learning. For 72.5% of the respondents' utilising e-learning was easier than using a library, 64.8% could easily use the web for lectures, 67.6% could learn the courses through the web, and acquiring any significant information from the internet was easy for 73.3% of the respondents. In comparison, 64.7% of respondents disagreed that e-learning may eventually turn them into slaves of technology, and 71.8% disagreed that using the internet makes people slower. 62% of respondents indicated that their experience with e-learning was understandable. The overall mean score for ease of e-learning use was 2.2.

Table 4.4: Distribution of answers to questions in ease of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

Statements	Frequency, n (Percentage, %)					Mean ± SD
	SD	D	N	A	SA	
Ease of e-learning						2.2 ± 0.6
1. Using e-learning is more difficult than using the library	48 (33.8)	55 (38.7)	9 (6.3)	17 (12.0)	13 (9.2)	2.2 ± 1.3
2. I cannot read the lectures notes through the web	49 (34.5)	43 (30.3)	19 (13.4)	21 (14.8)	10 (7.0)	2.3 ± 1.3
3. I cannot learn courses through the web.	57 (40.1)	39 (27.5)	22 (15.5)	15 (10.6)	9 (6.3)	2.2 ± 1.2
4. It is difficult to acquire any significant information by using internet.	60 (42.3)	44 (31.0)	17 (12.0)	15 (10.6)	6 (4.2)	2.0 ± 1.2
5. It is difficult to express my thoughts by writing through e-learning.	41 (28.9)	57 (40.1)	12 (8.5)	22 (15.5)	10 (7.0)	2.3 ± 1.2
6. I find that using the internet make me slow	47 (33.1)	55 (38.7)	14 (9.9)	9 (6.3)	17 (12.0)	2.3 ± 1.3
7. I feel we are becoming slaves to technology.	58 (40.8)	34 (23.9)	25 (17.6)	18 (12.7)	7 (4.9)	2.2 ± 1.2
8. My interaction with e-learning is not understandable	47 (33.1)	41 (28.9)	22 (15.5)	17 (12.0)	15 (10.6)	2.4 ± 1.3

4.2.4 Technical support.

The technical assistance provided by the respondents' institutions throughout the implementation and utilization of e-learning is shown in Table 4.5. The vast majority of respondents had favorable attitude on technical support. Only 53.5% of students sought any assistance from the college support services, while 57.1% of students were aware of the institution's updated website. However, 54.9% of the students felt that their institution had adequate technology, and about 38.8% of the respondents disagreed that the institution offered them e-learning training programs. The overall mean score for the provision of technical support for e-learning was 3.3.

Table 4.5: Distribution of answers to questions in technical support of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

Statements	Frequency, n (Percentage, %)					Mean ± SD
	SD	D	N	A	SA	
Technical support						3.3 ± 0.8
1. My institute has an updated website.	12 (8.5)	15 (10.6)	34 (23.9)	62 (43.7)	19 (13.4)	3.4 ± 1.1
2. My institute facilitates e-learning training program	19 (13.4)	36 (25.4)	33 (23.2)	30 (21.2)	24 (16.9)	3.0 ± 1.3
3. My institute has adequate technology for e-learning.	18 (12.7)	23 (16.9)	22 (15.5)	50 (35.2)	28 (19.7)	3.3 ± 1.3
4. I seek technical assistance from college support services.	22 (15.5)	14 (9.9)	30 (21.1)	45 (31.7)	31 (21.8)	3.3 ± 1.3

4.2.5 Learning stressor.

Table 4.6 shows the stressors that the respondents faced during e-learning. 56.3% of the respondents indicated that they were not worried about using e-learning effectively. Due to slow internet connections, the majority (71.1%) of them felt more stressed, and 48.6% disagreed with feeling pressured by their teachers to use e-learning. The overall mean score for e-learning stressors was 3.1.

Table 4.6: Distribution of answers to questions in learning stressor of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

		Frequency, n (Percentage, %)					Mean
Statements		SD	D	N	A	SA	$\pm$ SD
Learning stressor							3.1
							$\pm$ 0.9
1.	Feel anxious about my ability to use e-learning effectively.	22 (15.5)	58 (40.8)	32 (22.5)	25 (17.6)	5 (3.5)	2.5 $\pm$ 1.1
2.	Slow internet connections stress me	9 (6.3)	17 (12.0)	15 (10.6)	32 (22.5)	69 (48.6)	4.0 $\pm$ 1.3
3.	I feel pressured by my teachers to use e-learning for my research/ learning activities	20 (14.1)	49 (34.5)	38 (26.8)	23 (16.2)	12 (8.5)	2.7 $\pm$ 1.2

4.2.6 E-distant use of e-learning.

Table 4.7 represents the importance of distant use of e-learning. The majority (68.3%) agreed that e-learning is a great way to reach students who reside in remote areas and 66.7% agreed that it reduces stress linked to travel. 55.8% and 67.7% of the respondents, respectively, agreed that e-learning should be adapted to allow married students to balance work and family responsibilities and also allow working students to study from home. The overall mean score for distant use of e-learning was 3.9.

Table 4.7: Distribution of answers to questions in e-distant use of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

		Frequency, n (Percentage, %)					Mean
Statements		SD	D	N	A	SA	$\pm$ SD
E-distant use of e-learning							3.9
							$\pm$ 0.9
1.	E-learning should be offered fully online to reach students living in remote areas.	4 (2.8)	18 (12.7)	28 (19.7)	44 (31.0)	48 (33.8)	3.8 $\pm$ 1.1
2.	E-learning should be used to reduce travel related stress.	11 (7.7)	13 (9.2)	21 (14.8)	46 (32.4)	51 (35.9)	3.8 $\pm$ 1.2
3.	E-learning should be adapted to allow married students to balance family and study demands	4 (2.8)	11 (7.7)	29 (20.4)	52 (36.6)	46 (32.4)	3.9 $\pm$ 1.0
4.	E-learning should be adapted to allow working students to study from home.	4 (2.8)	11 (7.7)	26 (18.3)	52 (36.6)	49 (34.5)	3.9 $\pm$ 1.0

4.3 The overall attitude of respondents regarding e-learning

Table 4.8 shows the overall attitude regarding e-learning. Higher mean scores indicated a more positive attitude of the respondents regarding e-learning. Overall, the mean score of 5-point Likert Scale of attitude on practice of e-learning is 3.64. Thus, the undergraduate nursing students had favorable attitude towards e-learning.

Table 4.8: Overall attitude regarding e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (N = 142)

Overall attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic	Total number of respondents, n = 142	
	Mean Score 5-Point Likert Scale	Mean Score Interpretation
	3.64	Favourable/positive attitude

4.4 Association between socio-demographic characteristic and attitude regarding practice of e-learning among undergraduate nursing (N = 142).

The normality test had been conducted for the attitude on the practice of e-learning among undergraduate nursing students and it had found that the total score is normally distributed with Skewness of -0.083 and Kurtosis of -0.899 which is within the normal range of -1 to 1 (George & Mallery, 2010). Thus, a parametric test had been conducted to rule out the association between socio-demographic characteristics of respondents and attitude on the practice of e-learning.

Table 4.9: Distribution of association between socio-demographic characteristics and attitude on the practice e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. (n = 142)

Variable (Socio-demographic characteristics)	Attitude on the practice of e-learning among undergraduate nursing students		
	Mean	p-value	F
Age			
< 20 years old	3.38	0.228 ^b	1.493
20 to 25 years old	3.66		
> 25 to 30 years old	3.35		
Gender			
Male	2.88	0.000 ^a	
Female	2.61		
Year			
1 st Year	3.68	0.061 ^b	2.515
2 nd Year	3.49		
3 rd Year	3.81		
4 th Year	3.57		
Residence			
Urban	3.77	0.028 ^b	3.671
Semi-urban	3.52		
Rural	3.66		
Income			
< RM 4,850 (B40)	3.63	0.701 ^b	0.357
RM 4,851 – RM 10,970 (M40)	3.67		
> RM 10,971 (T20)	3.47		
Gadget			
Mobile/smartphone	3.85	0.021 ^b	3.331
Computer	3.53		
Laptop	3.56		
Tablet	3.86		
Source			
Wi-Fi (wireless fidelity)	2.64	0.670 ^a	
Mobile data	2.68		

*P-value ≤ 0.05 considered as statistically significant

a. Independent T-Test

b. One-Way Independent ANOVA

4.5 Association between age and attitude on the practice of e-learning among undergraduate nursing (N = 142).

From the table 4.10, the age group between 20 to 25 years old have highest number for favorable attitude compared to other age group. However, the same age group respondents also scored majority for unfavorable attitude on the practice of e-learning. Based on the One-way ANOVA test in table 4.9, there were no significant association ($p=0.228$) where p -value is higher than 0.05.

Table 4.10: Cross-Tabulation Analysis between age and attitude on the practice of e-learning.

Age	Attitude on the practice of e-learning			Total
	Unfavourable/ negative attitude	Neutral attitude	Favourable/ positive attitude	
< 20 years old	2	1	3	6
20 to 25 years old	48	24	61	132
> 25 to 30 years old	0	2	2	4
Total	49	27	66	N=142

4.6 Association between gender and attitude on the practice of e-learning among undergraduate nursing (N = 142).

From the table 4.11 majority of male respondents have favorable attitude on the practice of e-learning compared to female respondents who have more unfavorable attitude. Based on the independent T-Test result for relationship between gender and attitude on the practice of e-learning, there were significant association ($p=0.000$) where the p value is less than 0.05.

Table 4.11: Cross-Tabulation Analysis between gender and attitude on the practice of e-learning.

Gender	Attitude on the practice of e-learning			Total
	Unfavourable/negative attitude	Neutral attitude	Favourable/positive attitude	
Male	1	4	20	25
Female	48	23	46	117
Total	49	27	66	N=142

4.7 Association between year of study and attitude on the practice of e-learning among undergraduate nursing (N = 142).

From the table 4.12, 4th year respondents' group have the highest favorable attitude on the practice of e-learning which is n=23. Based on the One-way ANOVA test on table 4.9, there were no significant association ($p=0.061$) where p-value is higher than 0.05.

Table 4.12: Cross-Tabulation Analysis between year of study and attitude on the practice of e-learning.

Year of study	Attitude on the practice of e-learning			Total
	Unfavorable/negative attitude	Neutral attitude	Favorable/positive attitude	
1 st Year	12	8	14	34
2 nd Year	8	10	13	31
3 rd Year	14	6	16	36
4 th Year	15	3	23	41
Total	49	27	66	N=142

4.8 Association between residence and attitude on the practice of e-learning among undergraduate nursing (N = 142).

From the table 4.13, the respondents with urban residence have the highest favorable attitude on the practice of e-learning (n=33) compared to other residence groups whereas respondents with semi-urban residence is n=25, and rural residence is n=8, respectively. Based on the One-way ANOVA test on table 4.9, there were significant association ($p=0.028$) where the p-value is below than 0.05.

Table 4.13: Cross-Tabulation Analysis between residence and attitude on the practice of e-learning.

Residence	Attitude on the practice of e-learning			Total
	Unfavourable/negative attitude	Neutral attitude	Favourable/positive attitude	
Urban	13	8	33	54
Semi-urban	24	16	25	65
Rural	12	3	8	23
Total	49	27	66	N=142

4.9 Association between monthly family income (RM) and attitude on the practice of e-learning among undergraduate nursing (N = 142).

From the table 4.14, majority of respondents with < RM 4,850 (B40) monthly family income group (n=39) have favorable attitude on the practice of e-learning. However, the same monthly family income group respondents also have the most unfavorable attitude on the practice of e-learning. Based on the One-way ANOVA test on table 4.9, there were no significant association ($p=0.701$) where p-value is higher than 0.05.

Table 4.14: Cross-Tabulation Analysis between monthly family income (RM) and attitude on the practice of e-learning.

Monthly family income (RM)	Attitude on the practice of e-learning			Total
	Unfavorable/ negative attitude	Neutral attitude	Favorable/ positive attitude	
< RM 4,850 (B40)	30	14	39	83
RM 4,851 – RM 10,970 (M40)	18	12	24	54
> RM 10,971 (T20)	1	1	3	5
Total	49	27	66	N=142

4.10 Association between gadgets/devices used in e-learning and attitude on the practice of e-learning among undergraduate nursing (N = 142).

It can be concluded from table 4.15 that most of the respondents have highest number of favorable attitude for using laptop (n=44) as the gadgets/devices used in e-learning followed by mobile/smartphone (n=12), whereas both computer and tablet are equal respectively which is n=5. Based on the One-way ANOVA test on table 4.9, there were significant association ($p=0.021$) where the p-value is less than 0.05.

Table 4.15: Cross-Tabulation Analysis between gadgets/devices used in e-learning and attitude on the practice of e-learning.

Gadgets/ devices used in e-learning	Attitude on the practice of e-learning			Total
	Unfavourable/ negative attitude	Neutral attitude	Favourable/ positive attitude	
Mobile/smartphone	10	5	12	27
Computer	3	6	5	14
Laptop	32	13	44	89
Tablet	4	3	5	12
Total	49	27	66	N=142

4.11 Association between source of the internet and attitude on the practice of e-learning among undergraduate nursing (N = 142).

Table 4.16 shows that majority of respondents used Wi-Fi as source of the internet have highest favorable attitude (n=51), compared to respondents that used mobile data as source of the internet (n=15). Based on the independent T-test result on table 4.9, there were no significant association ($p=0.670$) where p -value is higher than 0.05.

Table 4.16: Cross-Tabulation Analysis between source of the internet and attitude on the practice of e-learning.

Source of the internet	Attitude on the practice of e-learning			Total
	Unfavorable/negative attitude	Neutral attitude	Favorable/positive attitude	
Wi-Fi	37	16	51	104
Mobile data	12	11	15	38
Total	49	27	66	N=142

CHAPTER 5

DISCUSSION AND CONCLUSION

5.0 Introduction

The findings of this study are discussed further in this chapter based on the objective set. The discussion includes all the results of the descriptive findings of the respondents' socio-demographic characteristics. The descriptive results of attitude on the practice of e-learning among undergraduate nursing students also be discussed. On the other hand, the association between socio-demographic characteristics with attitude on the practice of e-learning will be explored in this study.

5.1 Socio-demographic characteristics

In this study, the majority age of the respondent is range between 20 years old to 25 years old which is showing that many of undergraduate nursing students are young adults. The results are similar with studies conducted by Nobi (2018), Kontto and colleagues (2020), Hickman and colleagues (2021), and Sandberg (2016). Next, followed by the age group which range from > 25 to 30 years old according to the age categorisation described in Discussion Paper 31: Age Standardization of Rates: A New WHO Standard Population (Ahmad et al., 2001). Hence, WHO adopted a standard based on the average age-structure of those populations to be compared (the world) over the like period of time that a new standard will be used (some 25-30 years).

Besides that, majority of the respondents are female (82.4%, n=117) which are similar to the studies done by Tomas and colleagues (2019), Tomas and colleagues (2021), Prosen and colleagues (2022), Alnjadat and colleagues (2019), Hunter and colleagues (2022), and Kolek (2012). This can be emphasised that nursing remain a

female dominated profession despite more men joining the profession now than they did in previous decades. On the other hand, the majority of the respondents are 4th year (28.9%, n=41) followed by 3rd year (25.4%, n=36), 1st year (23.9%, n= 34), and 2nd year (21.8%, n=31).

Furthermore, most of the respondents' residence in this study located at semi-urban area (45.8%, n=65). These results are similar to researches conducted by Pandurangarao (2018), Mahesh and Sobha (2016), and Maheswari (2017). The respondents staying in the semi-urban areas have better internet access but in the rural areas the situation is different as they can face a lot of slow internet connection which can make them unmotivated to participate this study online questionnaire. Meanwhile, similar studies conducted in Malaysia by Thangiah and colleagues (2020), Che Sulaiman and colleagues (2020), and Wan Puteh and colleagues (2019) stated that most of their respondents' monthly family income is < RM 4,850 (B40). This group of respondents are majority participating in this research because they are higher in number and most of them came from B40 group, applied to study in public universities compared to the private universities which have expensive study fees.

Moreover, the majority of the respondents for this study use laptop as the main gadget/device in e-learning (62.7%, n=89) which is similar to studies done by Gamage and colleagues (2021), Dello and colleagues (2018), and Merriam (2003). Additionally, using laptop in e-learning shown a better exam performance and higher learnability compared to a study conducted in Indonesia (Nurhudatiana et al., 2018) where the majority of the respondents used smartphones in e-learning. Next, more than half of the respondents for this study used Wi-Fi as the source of the internet, 73.2% (n=104) Which is similar to the studies conducted by Moate and colleagues (2017),

Asio and colleagues (2021), Tarimo and Kavishe (2017), Chirwa (2018), Selvaraja and colleagues (2014), and O'Brien and colleagues (2022) due to most e-learning platforms require ample internet data and purchasing mobile data bundles is on the high side (Budiman, 2020).

5.2 Attitude on the practice of e-learning (perceived usefulness, intention to adapt, ease of learning, technical support, learning stressor, and e-distant use) among undergraduate nursing students

In this present study, the mean score for perceived usefulness of e-learning is $3.5 \pm \text{SD } 0.5$. Majority of the respondents in this study had positive perception of the usefulness of e-learning which is similar to the studies carried out by Khan and colleagues (2020) in India and Safura (2021) in Indonesia. Most of respondents said that e-learning saved their time, solve many educational problems, enabled them to improve their access to learning materials catch up missed lectures. Time and money are saved as e-learning does not involve traveling to other places just to attend a class (Coman et al., 2020). Besides, more than 60% of them revealed that e-learning is as informative as the teacher and help to reinforce my knowledge. E-learning has transformed the educational sector by enabling students being informative as they can share information and data with each other in a relatively quick and easy way (Abou El-Seoud et al., 2014). Despite that, almost three-fifths of the respondents were negative regarding e-learning could never completely replace other forms of teaching and learning. This is because most of them still prefers the traditional face-to-face classroom rather than e-learning which is similar to studies conducted by Kemp and Grieve (2014) in Australia, and Paechter and Maier (2010) in Austria.

Next, the mean score for intention to adapt e-learning in this present study is $2.8 \pm \text{SD } 0.4$. From the results of this study, the assessment of the intention to adapt e-

learning found that more than 67.6% of respondents agreed that e-learning make them comfortable and 58.4% of them agreed using e-learning makes learning fun. Study by Yusnilita (2020) in Indonesia revealed 80% of respondents agreed that online learning is interesting for students. Meanwhile, 85% of respondents in a study conducted in Pakistan by Ali and colleagues (2016) stated they intended to sign up for and attend future online courses. This present study findings also found that majority of respondents plan to participate in future e-learning courses and buy a computer to be able to follow lecture notes online while attending online classes. Hence, this shown that students have strong intention towards using e-learning. Contrary to this finding, a study by Mushtaque and colleagues (2022) found that the students exhibited negative intention to implement online learning in their academic settings. Similarly, 84.2% of students stated they did not want to continue online learning showed in a study done during the pandemic to determine their insight regarding this type of learning (Susila et al., 2020).

Regarding ease of learning, the mean score in this present study is $2.2 \pm \text{SD } 0.8$ indicated that two-fifth of the respondents had satisfactory responses towards it. In addition, 72.5% and 73.3% of the respondents in present study believed that it is easy to use e-learning than library and acquire any significant information by using internet. Perdana and Prasajo (2020) found that e-learning is practical and easier to access than conventional library. The study agreed that by using e-learning, respondents can find an information that they need easily. E-learning programmes also can be custom-tailored to the profile, requirements, and collection features of academic libraries (Sivankalai, 2021).

The mean score of technical support of e-learning is $3.3 \pm \text{SD } 0.8$. Respondents have positive responses regarding technical support of e-learning. In order to implement e-learning approaches and execute the required skills needed, hence institutional support and institutional strategy are vital (Susila et al., 2020). In this present study, majority of the students agreed regarding the institutional has an updated website and adequate technology for e-learning. However, 38.8% of the respondents disagreed that their institutions facilitate e-learning training program. It is important that students have access to the appropriate technology and reasonable computer skills to benefit fully from e-learning (McKimm et al., 2003).

In this study, the mean score of learning stressor of e-learning is only 3.1. Findings from other study pointed out that learning stressors can trigger student's academic stress during online learning in a pandemic a key challenge to fostering e-learning (Kabir et al., 2021). More than 71% of the respondents in this present study were stressed with slow internet connections. Poor internet connection and lack of digital device accessibility are still impeding distance e-learning as the pandemic continues which contribute to students falling behind academically. A study conducted by Jibrin and colleagues (2017) revealed that the one of the major problem encountered by (21%) of the respondents was the problem of slow internet speed. Congruently, 56.3% of respondents in this study feel ease about their ability to use e-learning effectively and disagreed that it adds to another level of stress. Students that were found to be underprepared in terms of e-learning can contribute getting stressed over which it can cause inconvenience and frustration to them (Nassr et al., 2020).

Advantage of distance e-learning is the level of flexibility it provides for students. In addition, distance e-learning has been reported to make it easier and more

effective for students to access a wider range and greater quantity of information (Ghanizadeh et al., 2013). As a result, students have more control over the educational content, learning sequence, and time. Distance e-learning allow students to use minimal financial resources to access various learning tools. The mean score for e-distant of e-learning in this study is $3.59 \pm \text{SD } 0.9$. The results of the current study revealed that majority of the respondents perceived distance e-learning to be one of the most efficient methods due to its capacity to reach remote areas, decrease in travel expenses, easy adaption by married students to balance home and study, and its ability to allow for both work and study from home. Distance e-learning has emerged as a new method of teaching to maintain the continuity of education during the COVID-19 pandemic.

5.3 The overall attitude of respondents regarding e-learning

In this present study, the mean score for overall attitude on the practice of e-learning is 3.64 which can be considered the respondents have favorable attitude regarding practice of e-learning. The result was similar to the other studies conducted by Sánchez and Karaksha (2022), Bovermann and colleagues (2018), Law (2021), and Bertea (2009). A similar finding was found in another study as well (Mukhametshin et al., 2021). Meanwhoile, in a study conducted in Libya, the respondents shown overall favorable attitude towards practice of e-learning (Rhema & Miliszewska, 2014). Meanwhile, in a study conducted in India to assess the attitude of nursing students, 61.7% considered e-learning useful for nursing education (Maurya et al., 2013). Hence, favorable attitudes towards e-learning show a bigger possibility that respondents will accept this innovative learning method (Dhiman et al., 2014). Aspects

that affect students' attitudes towards the control of their educational process must be considered for the application of e-learning.

5.4 Association between socio-demographic characteristics with attitude on the practice of e-learning:

Several inferential analyses had been conducted which revealed that there is no significant association between age, year of study, monthly family income (RM), source of the internet with attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. Moreover, there is a significant association between gender ($p=0.000$), residence ($p=0.028$) and gadgets/devices used in e-learning ($p=0.670$) with attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

5.4.1 Association between age with attitude on the practice of e-learning

From the One-Way ANOVA test analysis in this present study, it shown that there were no significant association ($p=0.228$) between age and attitude on the practice of e-learning where the p-value is $p>0.05$. The total 20 to 25 years old respondents ($n=132$), total < 20 years old respondents ($n=6$) and followed by the total > 25 to 30 years old respondents ($n=4$). Few studies (Ozkara & Ibili, 2021; Edwards, 2018) shown similar results with our study that there is no significant association between age and attitude on the practice of e-learning. This result is also similar to studies conducted in Nigeria ($p=0.814$) (Adewole-Odeshi, 2014) and in India ($p=0.738$) (Kumari et al., 2022). Moreover, Suri and Sharma (2013) also found that there is no association ($p=0.145$) between age and attitude towards e-learning where p-value is greater than 0.05. Thus, the age is not a significant criterion that impacts the e-learning attitude.

In contrast, several studies conducted in India ($p=0.023$) (Kumar et al., 2021) and in Bulgaria ($p=0.012$) (Peytcheva-Forsyth et al., 2018) shown that there is a significant association found between age and attitude on the practice of e-learning. Furthermore, a study conducted by Rhema and Miliszewska (2014) revealed that one of the factors that affect students' attitudes towards online learning is age. However, our study did not show the association between age and attitude on the practice of e-learning.

5.4.2 Association between gender with attitude on the practice of e-learning

First of all, there is a significant association between gender and attitude on the practice of e-learning ($p=0.000$). This result is similar to studies conducted in Bulgaria ($p=0.010$) (Peytcheva-Forsyth et al., 2018) and in United State America ($p=0.001$) (He, Jun and Freeman, 2010). In addition, the findings of research conducted by Abou Naaj and colleagues (2012) reported that male students, at a university in the UAE, tended to be more satisfied with online learning than their female counterparts, while Liaw and Huang's study (2011) also shown that male students at a university in China had more favorable attitudes towards e-learning. This emphasised that gender could influence the attitude on practice of e-learning.

Although, there is a study stated that female was more persistent, committed and had stronger self-regulation than males, which also led to their significantly more positive online learning outcomes than males (Alghamdi et al., 2020). However, in the current study which based on the cross-tabulation analysis test result, 80% ($n=20$) of male respondents had favorable attitude towards e-learning compared to 41% ($n=48$) of the female respondent have unfavorable attitude on the practice of e-learning. This

might be because males usually have shown a confident stance on the use of technology in learning (Ausburn et al., 2009) and they were considerably more confident than females in accessing the internet and printing learning materials from a website. Also, He Jun and Freeman (2010) stated that females feel less confident with technology because they have learned less and practiced less.

5.4.3 Association between year of study with attitude on the practice of e-learning

From the ANOVA test analysis results in this study, it showed they were no significant association ($p=0.061$) between year of study and attitude on the practice of e-learning where the p -value >0.05 . Total 4th year respondents ($n=41$), total 3rd year respondents ($n=36$), total 1st year respondents ($n=34$), and total 2nd year respondents ($n=31$). Based on table 16, favorable attitude on the practice of e-learning discovered according to year of study were as following. 4th year respondents 34.8% ($n=23$), 3rd year respondents 24.2% ($n=16$), 2nd year respondents 19.7% ($n=13$), and 1st year respondents 21.2% ($n=14$). A study was done by Kar and colleagues (2014) in West Bengal shown a similar result with our study where there is no significant association ($p=2.754$) between year of study with attitude on the practice of e-learning which indicated that year of study did not influence university students' attitude on the practice of e-learning. In another study conducted in Malaysia by Kaur and colleagues (2022) stated that year of study was not significantly associated ($p=0.121$) with attitude towards e-learning practice

Contrary to this finding, the result of a study conducted by Ngampornchai and Adams (2016) on undergraduate students in Thailand the authors found that the acceptance of E-learning is related to the students' degree year. Specifically, the

students who are in a senior year tend to be more willing to accept E-learning. Moreover, research done by Ghenghesh and colleagues (2018) revealed that degree year can influence the attitude of the university students towards e-learning. This shows that the students still feel awkward to the new learning style as they must face so many changes compared to the normal learning environment as they used to.

5.4.4 Association between residence with attitude on the practice of e-learning

Furthermore, in this present study shown that there is a significant association between residence and attitude on the practice of e-learning ($p=0.028$) where the p -value <0.05 . The total semi-urban respondents (45.8%) ($n=65$), total urban respondents (38%) ($n=54$), and total rural respondents (16.2%) ($n=23$).

There is limited literature on the association between residence and attitude towards e-learning. A study conducted in Indonesia by Bali and colleagues (2018) supported the finding which they revealed there is significant association ($p=0.005$) of attitude towards e-learning with residence. This is because rural area has poor access to technology and limited support networks for internet which might make rural respondents feel burden and difficult for them to participate in e-learning. This could negatively influence teaching and e-learning activities. Additionally, Doley and colleagues (2021) also stated that respondents from urban and semi-urban areas have more favorable attitude on the practice of e-learning than respondents in rural area.

In contrast, few studies conducted by Kar and colleagues (2014) ($p=0.520$) and Kaur and colleagues (2022) ($p=0.999$) found that there is no significant association between residence and university students' attitude towards e-learning. However, our

study did show there is association between residence and attitude on the practice of e-learning among undergraduate nursing students.

5.4.5 Association between monthly family income (RM) with attitude on the practice of e-learning

A study conducted by Thapa and colleagues (2021) shown similar results with our study that there is no significant association between monthly family income ($p=0.701$) with attitude on the practice of e-learning where the p -value >0.05 . There is limited literature on the association between monthly family income (RM) and attitude towards e-learning. In this present study, the total <RM 4,850 (B40) respondents ($n=83$), total RM 4,851–RM 10,970 (M40) respondents ($n=54$), and total >RM 10,971 (T20) respondents ($n=5$). Based on the findings, high favorable attitude on the practice of e-learning discovered according to monthly family income (RM) were as following. The group <RM 4,850 (B40) respondents 59.0% ($n=39$), RM 4,851–RM 10,970 (M40) respondents 36.4% ($n=24$), and >RM 10,971 (T20) respondents 4.5% ($n=3$).

In contrast, a study conducted in New Delhi done by Bhuvaneswari and Padmanaban (2012) shown that there is a significant association ($p=0.000$) between monthly family income and attitude on the practice of e-learning where the p -value >0.05 . Few studies supported that good family income influence respondents' attitude towards online learning (Bali et al., 2018; Al-Hanawi et al., 2020; Kalam et al, 2021). This is because having good financial opportunities can strengthened the capacity and willingness to use digital resource and had stronger approach attitudes to online education (Lee, 2008). Furthermore, students who are in financial distress may find it difficult to attend online programs. However, our study did not show the association between monthly family income (RM) and attitude on the practice of e-learning.

5.4.6 Association between gadgets/device used in e-learning with attitude on the practice of e-learning

From the One-Way ANOVA test analysis in this study, there is a significant association between gadgets/devices used in e-learning and attitude on the practice of e-learning ($p=0.021$) where the p -value is less than 0.05. There is limited literature on the relationship between gadgets/device used in e-learning and attitude on the practice of e-learning among undergraduate nursing students. A study was done in Malaysia by Mohamad Ashari and colleagues (2018) showed a similar result with our study where there is a significant association between the knowledge of the gadgets/devices used in e-learning ($p=0.000$) with and students' socio-emotion that influence the attitude towards e-learning. In the present study, our findings found that types of gadgets mostly used in e-learning by respondents were laptop (62.7%) ($n=89$), mobile/smartphone (19%) ($n=27$), computer (9.9%) ($n=14$), and followed by tablet (8.5%) ($n=12$).

This emphasised that different mobile gadgets/devices (specifically, laptops versus smartphones) influences students' engagement, behaviour and experience when watching academic videos to support online learning activities in the classroom (Albó et al., 2018). Hence, the type of mobile device used in e-learning need to be carefully chosen to maximize the student's comfortability and promote positive behaviour.

5.4.7 Association between source of the internet with attitude on the practice of e-learning

An independent T-test analysis done had shown that there is no association ($p=0.670$) between source of the internet and attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-

19 pandemic where the p -value >0.05 . There is limited literature on the association between source of the internet and attitude towards e-learning. A study demonstrated that there is no association ($p=0.137$) between source of internet access and attitude towards e-learning which similar to the findings of our study (Gormley et al., 2009).. In this present study, the most picked source of internet connection was Wi-Fi (Wireless Fidelity) connection (73.2% of respondents) ($n=104$), followed by mobile data (26.8% of respondents) ($n=38$).

In contrast, several studies conducted in Saudi Arabia and Turkey by Al Otaibi (2012), and Tekynarslan (2008) found that source of internet access had a significant association and positive relationship with students' general attitudes towards e-learning. Nowadays, students have access to the internet in some form which shown an increase in Wi-Fi use that could influence attitude on the practice of e-learning. Moreover, university also provides free Wi-Fi access at all campuses so that students can use the internet services provided at the campuses. Typically, students who can only access the internet through a mobile data service are likely to have more restricted access to the internet (Johnson et al., 2021), which make it harder for them to access online content material. Despite that, our study did not show the association between source of the internet and attitude on the practice of e-learning.

5.5 Conclusion

This research aimed to study the overall attitude on the practice of e-learning (perceived usefulness; intention to adapt e-learning; ease of e-learning use; technical support; e-learning stressors; e-distant use of e-learning) among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. In conclusion, researcher had found that the respondents in this study have favorable attitude on the practice of e-learning with the total mean score for overall attitude is $3.64 \pm SD 0.51$. The results also indicate that socio-demographic data has an influence towards the attitude on the practice of e-learning among undergraduate nursing students. This shows that

It can be concluded that gender, residence, and gadgets/devices used in e-learning play a role in contributing to the nursing students' attitude on the practice of e-learning as there were significant associations of $p=0.000$, $p=0.028$, and $p=0.021$ respectively where p -value is ≤ 0.05 . In conclusion, it is critical for the nursing educational system to improve e-learning to become more user-friendly whereas the virtual experiences of practical sessions can also be carried out effectively and efficiently to accommodate with the undergraduate nursing students' learning process.

CHAPTER 6

LIMITATION AND RECOMMENDATION

6.0 Introduction

This study is a cross-sectional study that had been conducted within a short period by using the convenience sampling method for data collection. Thus, there are several limitations identified during the research period that will be discussed in this chapter.

6.1 Limitations

There were few limitations in this study. Firstly, due to the limitation of time and resource, thus gathering of data was only carried out for a short period of time. Hence, the study had a small sample size compared to the estimated sample size required of undergraduate nursing students drawn from only four universities that located at Selangor and Pahang. As a result, the findings may not apply to other states of Malaysia and may not be representative of the entire country

Very few studies were found conducting the attitude on the practice of e-learning for the Malaysian students, where limited studies were explicitly found investigating the efficacy of this method among the undergraduate nursing students of Malaysia so far, which is a strength of this study. This study also could not be generalized to all undergraduate nursing students in public universities as this study only involved 4 public universities in Malaysia. .

Furthermore, the geographical distance between researcher and other institutions, as well as the COVID-19 pandemic scenario restricted the study's ability to collect data. Questionnaires were distributed in terms of both physical copies and through online platform. Thus, the undergraduate nursing students were given the

option to respond to questionnaires anonymously, making it difficult to determine if they duplicated responses from friends or filled out the questionnaire form more than once. Therefore, the undergraduate nursing students' responses may be deceptive and may not accurately reflect their actual response.

6.2 Implication and recommendation

Although the majority of respondents in this present study have favorable attitude on the practice of e-learning, such measure needs to be taken to implement the e-learning in nursing educational progress. Improving the facilities and technology skills can improve the attitude of the students towards e-learning. When applying e-learning, factors including student motivation, personalities, backgrounds, and feelings of control over their educational process must be taken into consideration. This is because e-learning platforms encourage student-centered learning and are easy to alter amid sudden crises such as COVID-19. Hence, e-learning is a good alternative way that can be included in the learning system.

Moreover, program or event that can influence the female undergraduate nursing students become more interested in e-learning is highly recommended. This is because at the end of the program, they will show favorable attitude towards the technology and motivated to participate in e-learning. It is recommended for future research to assess the various other readiness factors (sociological, environmental, human resource, financial, and content) on a larger scale study to assess how ready the undergraduate nursing students in Malaysia are prepared to implement e-learning.

The findings also suggested that other associated variables varied the attitude on the practice of e-learning domains. Hence, this study's findings might fill the gap of no baseline information regarding attitude of students, particularly undergraduate nursing students in Malaysia throughout COVID-19 pandemic.

On the other hand, probability sampling must be applied since it is more precise and systematic. In the future, bigger sample size may be used since the results would be more generally applicable if the study were conducted in other states and areas.



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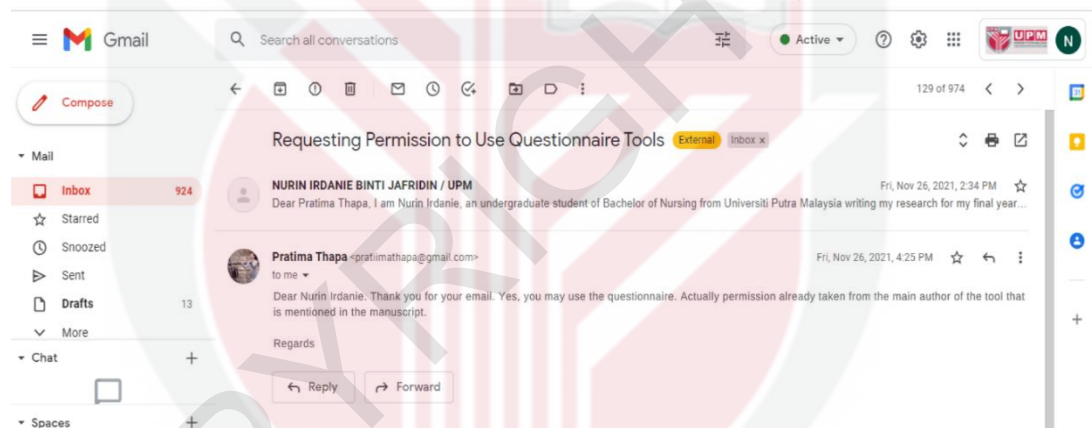
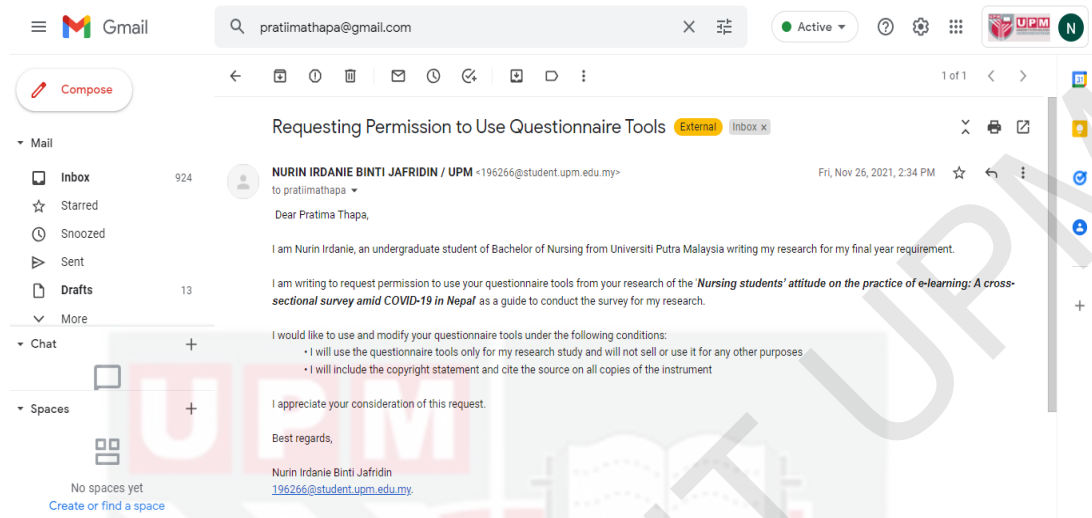
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APPENDICES

Appendix A: Written Permission for Instrument



2/27/22, 10:12 PM

University Putra Malaysia Mail - Permission To Use Questionnaire Tool



NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>

Permission To Use Questionnaire Tool

2 messages

NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>
To: asethi@qu.edu.qa

Thu, Feb 24, 2022 at 11:55 AM

Dear Dr. Ahsan Sethi,

I am Nurin Irdanie, an undergraduate student of Bachelor of Nursing from Universiti Putra Malaysia writing research for my final year requirement.

I am writing to request permission to use your questionnaire tool from your research of the '*Attitude Of Nursing Students Towards E-learning (2016)*' as a guide to conduct a survey for my research study.

I would like to use and modify your questionnaire tools under the following conditions:

- I will use the questionnaire tools only for my research study and will not sell or use it for any other purposes
- I will include the copyright statement and cite the source on all copies of the instrument

I appreciate your consideration of this request.

Best regards,

Nurin Irdanie Binti Jafridin
196266@student.upm.edu.my

Ahsan Sethi <asethi@qu.edu.qa>

To: NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>

Thu, Feb 24, 2022 at 1:09 PM

Thank you for your email. Please go ahead and use the tool with proper citation and acknowledgment of the sources
Best Regards
Ahsan

On 24 Feb 2022, at 06:56, NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my> wrote:

[Quoted text hidden]

<https://mail.google.com/mail/u/0/?ik=d52cd91160&view=pt&search=all&permmsgid=thread-a%3A1015342097155267131&siml=msg-a%3A-2112...> 1/1

Appendix B: Participant Information Sheet and Informed Consent Form

(English Version)

**JAWATANKUASA ETIKA UNIVERSITI UNTUK
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA**



RESPONDENT'S INFORMATION SHEET

Please read the following information carefully and do not hesitate to discuss any questions you may have with the researcher.

1. STUDY TITLE: Attitude On The Practice Of E-learning Among Undergraduate Nursing Students In Public Universities In Malaysia Throughout COVID-19 Pandemic.

2. INTRODUCTION:

The emergence of a global outbreak of the COVID-19 pandemic undoubtedly affected educational institutions worldwide including the public universities in Malaysia. As a result, the Malaysian Higher Education Ministry has decided that all teaching activities at all universities and other higher education institutions must be conducted online to prevent another COVID-19 outbreak. Therefore, this research aims to study the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

You are invited to participate in this research study because you have criteria for this study that requires your perception regarding e-learning. The details of the research trial are described in this document. Please take your time to read through and understand why the research is being done and what it will involve. You need to consider this information carefully before you decide if you are willing to participate. Ask the researcher if anything is unclear or if you like more information. After you are properly satisfied that you understand this study and that you wish to participate, you

must sign this informed consent form. To participate in this study, you may be required to provide your researcher with information on your health history; you may harm yourself if you are not truthful with the information provided.

Your participation in this study is voluntary. You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data obtained before your withdrawal will still be utilized for the study. Your refusal to participate or withdraw will not affect any medical or health benefits to which you are otherwise entitled.

This study has already been approved by the Ethics Committee for Research Involving Human Subjects (JKEUPM).

3. WHAT WILL YOU HAVE TO DO?

You have to fulfill all the inclusion criteria and sign the agreement for undergraduate nursing students from year 1 until year 4 to participate in this research voluntarily. You will be given a set of questionnaire forms and you will need to complete them in a given time and give it back to the researcher. This questionnaire consists of two parts: Part 1 (Socio-demographic) and Part 2 (Measuring attitude of the nursing students regarding e-learning). 10 to 15 minutes will be allocated for respondents to complete the questionnaire.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

The study will be done for undergraduate nursing students in public universities in Malaysia. There will be exclusion if you have the criteria below:

- i. Currently under medical leave for a serious condition.
- iii. More than four years of study as undergraduate nursing students.

5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT?

All the information that you provided for this study is valuable and much appreciated. The benefit of this study is to encourage undergraduate

nursing students to use e-learning as a self-preparedness in nursing education for the emergency-like situation such as the COVID-19 pandemic in the future. The findings will serve as the baseline information that is beneficial to the nursing students for improvement which will be made in developing more user-friendly with minimal technical barriers in using e-learning. Hence, the virtual experiences of practical sessions can be carried out effectively and efficiently for the undergraduate nursing students which eventually can contribute to better academic performance. However, by participating in this study, there will be no compensation given to the respondent as this participation is voluntary.

(b) TO THE INVESTIGATOR?

The information and data obtained from this study will allow the researcher to study the attitude on the practice of e-learning among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic. The researcher will be able to identify the attitude and what is currently lacking in the practice of e-learning among undergraduate nursing students. Furthermore, the findings from the study can propose any improvement to be done so that it will improve the quality of e-learning and undergraduate nursing students able to exhibit a positive attitude on the practice of e-learning.

6. WHAT ARE THE POSSIBLE RISKS?

There are no risks or side effects when you participate in this study.

7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?

Yes. All information that you provide in the questionnaire obtained will be kept and treated as strictly confidential per applicable laws and/or regulations. Your identity as the respondent will not be revealed without your permission throughout the activities in this study including presentation and publication. However, anyone who is related to this study including supervisor, co-supervisor, research staff, qualified monitors, and auditors has the right to inspect and photocopy your related record when necessary.

8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

If you have any inquiries concerning the survey, please do not hesitate to contact one of the people listed below.

i. Researcher

Nurin Irdanie Binti Jafridin

Contact no.: +601110845781

E-mail: 196266@student.upm.edu.my

ii. Supervisor

Puan Rosna Binti Abdul Raman

Contact no.: +60193883844

E-mail: rosnaar@upm.edu.my

iii. Co-supervisor

Dr. Hasni Idayu Binti Saidi

Contact no.: +60122158077

E-mail: hasniidayu@upm.edu.my

Please initial here if you have read and understood the contents of this page_____

INFORMED CONSENT FORM

Title of Study:

Attitude On The Practice Of E-Learning Among Undergraduate Nursing Students In Public Universities In Malaysia Throughout COVID-19 Pandemic

I Identity Card No.
address.....
.....hereby
voluntarily agree to take part in the research stated above *(clinical /drug trial/video recording/ focus group/interview-based/ questionnaire-based).

I have been informed about the nature of the research in terms of methodology, possible adverse effects and complications (as written in the Respondent's Information Sheet). I understand that I have the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to my identity will remain private and confidential.

I* wish / do not wish to know the results related to my participation in the research

I agree/do not agree that the images/photos/video recordings/voice recordings related to me be used in any form of publication or presentation (if applicable)

* delete where necessary

Signature Signature
(Respondent) (Witness)

Date : Name :,.,.,.,.,.

I/C No. :

I confirm that I have explained to the respondent the nature and purpose of the above-mentioned research.

Date Signature
(Researcher)

**Appendix C: Participant Information Sheet and Informed Consent Form
(Malay Version)**

**JAWATANKUASA ETIKA UNIVERSITI UNTUK
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA**



PENERANGAN

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

1.TAJUK KAJIAN: Sikap Terhadap Amalan E-Pembelajaran Dalam Kalangan Pelajar Prasiswazah Kejururawatan Di Universiti Awam Di Malaysia Sepanjang Pandemik COVID-19.

2. PENGENALAN:

Kemunculan wabak global COVID-19 sudah pasti menjejaskan institusi pendidikan di seluruh dunia termasuk universiti awam di Malaysia. Berikutan itu, Kementerian Pengajian Tinggi Malaysia (KPTM) telah memutuskan bahawa semua aktiviti pengajaran di semua universiti dan institusi pengajian tinggi lain hendaklah dijalankan secara dalam talian bagi mengelak penularan wabak COVID-19. Oleh itu, kajian ini bertujuan untuk mengkaji sikap terhadap amalan e-pembelajaran dalam kalangan pelajar prasiswazah kejururawatan di universiti awam di Malaysia sepanjang pandemik COVID-19.

Anda dijemput untuk menyertai kajian penyelidikan ini kerana anda mempunyai kriteria untuk kajian ini yang memerlukan persepsi anda mengenai e-pembelajaran. Butiran percubaan penyelidikan diterangkan dalam dokumen ini. Sila luangkan masa anda untuk membaca dan memahami mengapa penyelidikan ini dilakukan dan perkara yang akan melibatkannya. Anda perlu mempertimbangkan maklumat ini dengan teliti

sebelum anda memutuskan sama ada anda bersedia untuk mengambil bahagian. Sila kemukakan pertanyaan kepada penyelidik jika ada sebarang kemusykilan atau jika anda ingin maklumat lebih lanjut. Selepas anda berpuas hati bahawa anda memahami kajian ini dan anda ingin mengambil bahagian, anda dikehendaki untuk menandatangani Borang Penerangan Dan Persetujuan Responden/Keizinan Peserta. Untuk mengambil bahagian dalam kajian ini, anda mungkin dikehendaki memberikan penyelidik maklumat tentang sejarah kesihatan anda; anda boleh membahayakan diri sendiri jika anda tidak jujur dengan maklumat yang diberikan.

Penyertaan anda dalam kajian ini adalah secara sukarela. Anda tidak perlu berada dalam kajian ini jika anda tidak mahu. Anda juga boleh menolak untuk menjawab sebarang soalan yang anda tidak mahu jawab. Jika anda secara sukarela menyertai kajian ini, anda boleh menarik diri daripada kajian ini pada bila-bila masa. Jika anda menarik diri, sebarang data yang diperolehi sebelum menarik diri masih akan digunakan dalam kajian ini. Keengganan anda untuk mengambil bahagian atau menarik diri tidak akan menjejaskan segala hak dan keistimewaan perubatan kesihatan yang anda layak terima.

Kajian ini telah pun mendapat kelulusan Jawatankuasa Etika Universti Untuk Penyelidikan Melibatkan Manusia (JKEUPM) Universiti Putra Malaysia.

3. APAKAH YANG PERLU ANDA LAKUKAN?

Anda perlu memenuhi semua kriteria kemasukan dan menandatangani perjanjian untuk pelajar kejururawatan sarjana muda dari tahun 1 hingga tahun 4 untuk menyertai penyelidikan ini secara sukarela. Anda akan diberikan satu set borang soal selidik dan anda perlu melengkapkannya dalam tempoh masa yang ditetapkan dan memberikannya semula kepada penyelidik.

Soal selidik ini mengandungi dua bahagian: Bahagian 1 (Sosio demografi) dan Bahagian 2 (Mengukur sikap pelajar kejururawatan berkenaan e-pembelajaran). 10 hingga 15 minit akan diperuntukkan kepada responden untuk melengkapkan borang soal selidik

4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?

Kajian ini akan dilakukan untuk pelajar prasiswazah kejururawatan di universiti awam di Malaysia. Akan ada pengecualian jika anda mempunyai kriteria di bawah:

- i. Kini dalam cuti perubatan kerana keadaan sakit.
- ii. Lebih daripada empat tahun pengajian sebagai pelajar prasiswazah kejururawatan.

5. APAKAH FAEDAH MENYERTAI KAJIAN INI?

a) KEPADA ANDA SEBAGAI PESERTA?

Segala maklumat yang anda berikan untuk kajian ini adalah berharga dan amat dihargai. Faedah kajian ini adalah untuk menggalakkan pelajar prasiswazah kejururawatan menggunakan e-pembelajaran sebagai persediaan diri dalam pendidikan kejururawatan untuk menghadapi situasi kecemasan seperti pandemik COVID-19 pada masa hadapan. Penemuan ini akan menjadi maklumat asas yang bermanfaat kepada pelajar kejururawatan untuk penambahbaikan yang akan dibuat dalam membangunkan lebih mesra pengguna dengan halangan teknikal yang minimum dalam menggunakan e-pembelajaran. Justeru, pengalaman maya sesi amali dapat dilaksanakan dengan berkesan dan cekap untuk pelajar prasiswazah kejururawatan yang akhirnya boleh menyumbang kepada prestasi akademik yang lebih baik. Namun begitu, dengan menyertai kajian ini, tiada pampasan yang akan diberikan kepada responden kerana penyertaan ini adalah secara sukarela.

b) KEPADA PENYELIDIK?

Maklumat dan data yang diperolehi daripada kajian ini akan membolehkan pengkaji mengkaji sikap terhadap amalan e-pembelajaran dalam kalangan pelajar prasiswazah kejururawatan di universiti awam di Malaysia sepanjang pandemik COVID-19. Pengkaji akan dapat mengenal pasti sikap dan kekurangan tentang amalan e-pembelajaran dalam kalangan pelajar prasiswazah kejururawatan. Tambahan pula, dapatan kajian dapat mencadangkan sebarang penambahbaikan yang perlu dilakukan supaya ia akan meningkatkan kualiti e-pembelajaran dan pelajar prasiswazah kejururawatan dapat mempamerkan sikap positif terhadap amalan e-pembelajaran.

6. ADAKAH IA BERISIKO?

Tiada risiko dan kesan-kesan sampingan semasa anda menyertai penyelidikan ini.

7. ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?

Ya. Semua maklumat yang anda berikan dalam soal selidik yang diperolehi akan disimpan dan dianggap sebagai sulit mengikut undang-undang dan/atau peraturan yang berkenaan. Identiti anda sebagai responden tidak akan didedahkan tanpa kebenaran anda sepanjang aktiviti dalam kajian ini termasuk pembentangan dan penerbitan. Walau bagaimanapun, pihak-pihak tertentu yang terlibat dengan kajian ini termasuk penyelia, penyelia bersama, kakitangan penyelidikan, pemantau bertauliah, dan juruaudit mempunyai hak untuk memeriksa dan memfotokopi rekod berkaitan anda jika diperlukan.

8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEMASA MENGIKUTI PENYELIDIKAN INI?

Sekiranya anda mempunyai sebarang pertanyaan mengenai kajian ini, sila hubungi salah seorang daripada orang yang disenaraikan di bawah.

i. Penyelidik

Nurin Irdanie Binti Jafridin

No. Tel.: +601110845781

Emel: 196266@student.upm.edu.my

ii. Penyelia

Puan Rosna Binti Abdul Raman

No. Tel.: +60193883844

Emel: rosnaar@upm.edu.my

iii. Penyelia Bersama

Dr. Hasni Idayu Binti Saidi

No. Tel.: +60122158077

Emel: hasniidayu@upm.edu.my

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini _____

BORANG PERSETUJUAN/KEIZINAN PESERTA

Tajuk Kajian:

**Sikap Terhadap Amalan E-Pembelajaran Dalam Kalangan Pelajar
Prasiswazah Kejururawatan Di Universiti Awam Di Malaysia Sepanjang
Pandemik COVID-19.**

Saya..... No Kad Pengenalan.

.....beralamat.....

.....denga

n ini bersetuju untuk mengambil bahagian secara sukarela dalam penyelidikan yang
tersebut di atas *(kajian klinikal/percubaan ubat-ubatan/rakaman video/kumpulan
sasaran/temuduga/ soal selidik).

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi
metodologi, risiko dan komplikasi (seperti tertulis pada Helaian Penerangan
Responden). Saya memahami bahawa saya berhak menarik diri dari penyelidikan ini
pada bila-bila masa tanpa memberi sebarang alasan. Saya juga memahami bahawa
sebarang maklumat yang berkaitan identiti saya akan dirahsiakan.

Saya * berminat / tidak berminat untuk mengetahui keputusan kajian yang
melibatkan saya.

I setuju/tidak bersetuju untuk imei/gambar/rakaman video/ rakaman suara digunakan
dalam apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).

*potong yang tidak berkenaan

Tandatangan Tandatangan
(Responden) (Saksi)

Tarikh : Nama :

No. K/P:.....

Saya mengesahkan bahawa saya telah menerangkan kepada responden ini sifat dan
tujuan penyelidikan yang tersebut di atas.

Tarikh Tandatangan
(Penyelidik)

Appendix D: Questionnaire



UNIVERSITI PUTRA MALAYSIA

FACULTY OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF NURSING

BACHELOR OF NURSING

RESEARCH TITLE:

**ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG
UNDERGRADUATE NURSING STUDENTS IN PUBLIC UNIVERSITIES IN
MALAYSIA THROUGHOUT COVID-19 PANDEMIC**

QUESTIONNAIRE

RESEARCHER: NURIN IRDANIE BINTI JAFRIDIN (196266)

SUPERVISOR: PUAN ROSNA BINTI ABDUL RAMAN

CO-SUPERVISOR: DR. HASNI IDAYU BINTI SAIDI

INSTRUCTION:

This study is conducted for academic purposes. All information will be kept private and confidential. Thank you for your cooperation in answering this questionnaire.

Part 1: Socio Demographic Information

1. Age:

☐ < 20 years old

☐ > 25 to 30 years old

☐ 20 to 25 years old

2. Gender:

☐ Male

☐ Female

3. Year of study:

☐ 1st Year

☐ 2nd Year

☐ 3rd Year

☐ 4th Year

4. Residence:

☐ Urban

☐ Rural

☐ Semi-urban

5. Monthly family income (RM):

☐ < RM 4,850 (B40)

☐ RM 4,851 – RM 10,970 (M40)

☐ > RM 10,971 (T20)

6. Gadgets/devices used in e-learning:

☐ Mobile/ Smartphone

☐ Computer

☐ Laptop

☐ Tablet

7. Source of the internet:

☐ Wi-Fi (Wireless Fidelity)

☐ Mobile data

Part 2: Likert scale measuring attitude of the nursing students regarding e-learning

1.	Statements		Tick (✓)				
			SD	D	N	A	SA
	a.	E-learning can solve many of the educational problems.					
	b.	E-learning saves time.					
	c.	E-learning improves access to learning material.					
	d.	E-learning helps me to achieve better results.					
	e.	E-learning increase learner's engagement in learning.					
	f.	E-learning improve teacher and students' interaction.					
	g.	E-learning increase my understanding of concept.					
	h.*	E-learning has created more problems than it solved.					
	i.*	E-learning is too time consuming to use.					
	j.*	E-learning has had little impact on me.					
	k.	E-learning is as informative as the teacher.					
	l.*	E-learning will never replace other forms of teaching and learning.					
	m.	E-learning help to reinforce my knowledge.					
	n.	E-learning help me to organize my work.					
	o.	E-learning help me to catch up missed lectures.					
	p.	E-learning increase my effectiveness to create presentations.					
	q.	E-learning increase my research capability.					
	r.	Universities should adopt e-learning for their students.					

2.	Intention to adapt e-learning		SD	D	N	A	SA
	a.*	E-learning makes me uncomfortable because I do not understand it.					
	b.*	E-learning is a de-humanizing process of learning.					
	c.*	I dislike the idea of using e-learning.					
	d.*	I am not in favor of e-learning as it leads to social isolation.					
	e.*	E-learning does not interest me.					
	f.	I plan to participate in future e-learning courses.					
	g.	I plan to buy a computer to be able to follow lectures notes online.					
	h.	Using e-learning makes learning fun.					
	i.	I do not know what I would do without e-learning.					

3.	Ease of learning		SD	D	N	A	SA
	a.*	Using e-learning is more difficult than using the library.					
	b.*	I cannot read the lectures notes through the web.					
	c.*	I cannot learn courses through the web.					
	d.*	It is difficult to acquire any significant information by using internet.					
	e.*	It is difficult to express my thoughts by writing through e-learning.					
	f.*	I find that using the internet make me slow.					
	g.*	I feel we are becoming slaves to technology.					
	h.*	My interaction with e-learning is not understandable.					

4.	Technical support		SD	D	N	A	SA
	a.	My institute has an updated website.					
	b.	My institute facilitates e-learning training program.					
	c.	My institute has adequate technology for e-learning.					
	d.	I seek technical assistance from college support services.					

5.	Learning stressor		SD	D	N	A	SA
	a.*	Feel anxious about my ability to use e-learning effectively.					
	b.*	Slow internet connections stress me.					
	c.*	I feel pressured by my teachers to use e-learning for my research/ learning activities.					

6.	E-distant use of e- learning		SD	D	N	A	SA
	a.	E-learning should be offered fully online to reach students living in remote areas.					
	b.	E-learning should be used to reduce travel related stress.					
	c.	E-learning should be adopted to allow married students to balance family and study demands.					
	d.	E-learning should be adopted to allow working students to study from home.					

Where, SD=Strongly disagree, D=Disagree, N=Neutral, A=Agree, SA= Strongly agree *Negative statements

THE END
Thank you for your cooperation

Appendix E: Gantt Chart

Year Project activities	2021			2022					
	Oct	Nov	Dec	Jan, Feb	Mar	Apr, May, June	July	Aug	Sept
Identify research problem									
Discussion with supervisor regarding the research title									
Review the article for literature review									
Select an appropriate questionnaire									
Preparing draft proposal									
Proposal presentation									
Submit proposal									
Ethical approval									
Obtain permission from the relevant party									
Conduct a pre-testing									
Conduct the research and data collection									
Data analysis and discussion									
Thesis preparation and presentation									
Submission research report									

Appendix F: Budget

No.	Items	Quantity x RM/unit	Amount (RM)
1.	Miscellaneous Internet & Phone Bill (during the conduct of research study)	10 months X RM 15.00	RM 150.00
2.	Printing - Questionnaire form	90 copies X RM 0.10	RM 90.00
3.	Stationaries		RM 50.00
		Total:	RM 290.00

Appendix H: Approval from the respective institutions (UKM, IIUM, UPM, UiTM Puncak Alam)

8/24/22, 10:18 PM

University Putra Malaysia Mail - Permission to Collect Data for Final Year Research Project in Faculty of Medicine, UKM.



NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>

Permission to Collect Data for Final Year Research Project in Faculty of Medicine, UKM.

Dekan Fakulti Perubatan UKM <dekanfp@ppukm.ukm.edu.my>

Fri, Aug 5, 2022 at 1:01 PM

To: NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>

Salam Nurin

saya tidak ada halangan
please communicate with nursing HOD

halim

On Tue, 2 Aug 2022 at 10:01, NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my> wrote:

Good morning, Prof. Dr. Raja Affendi Raja Ali,

My name is Nurin Irdanie Binti Jafridin. I am a final-year nursing student from Universiti Putra Malaysia. I am currently conducting my final year project research and I need Prof.'s approval for me to proceed with the data collection that would be collected among undergraduate nursing students in the Faculty of Medicine, Universiti Kebangsaan Malaysia (UKM).

- My research title is "ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG UNDERGRADUATE NURSING STUDENTS IN PUBLIC UNIVERSITIES IN MALAYSIA THROUGHOUT COVID-19 PANDEMIC."

Therefore, I would like to obtain a name list and student emails of the undergraduate nursing students of UKM as my study sample. Here I attached the permission letter signed by my main supervisor, puan Rosna Abdul Raman, and the approval letter from the Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (JKEUPM) to conduct this study data collection.

I would like to thank you in advance for your time. I also appreciate Prof.'s kindness and I am looking forward to Prof.'s reply.

Regards,
Nurin Irdanie
Final Year Nursing Student

—
Abdul Halim Abdul Gafor
MBBS(Malaya), MMed(UKM)
Dean, Faculty of Medicine
Professor of Internal Medicine & Nephrology
Consultant Physician & Nephrologist
Hospital Canselor Tuanku Muhriz
Universiti Kebangsaan Malaysia

<https://mail.google.com/mail/u/0/?ik=d02cb91160&view=pt&search=all&permmsgid=msg-f%3A1740296121351011054&dsqt=1&simpl=msg-f%3A...> 1/1



NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>

Permission to Collect Data for Research Project in Faculty of Medicine and Health Sciences, UPM**DEKAN FPSK / UPM** <dean.medic@upm.edu.my>

Mon, Jul 18, 2022 at 3:32 PM

To: MOHD KHAIRI HASAN / MEDIC <h_khairi@upm.edu.my>, NASRUL AMRI BIN SELAMAT / MEDIC

<nasrulamri@upm.edu.my>

Cc: 196266@student.upm.edu.my

Assalamualaikum wbt,

Mohon berikan senarai dan nombor matrik pelajar-pelajar di Fakulti Perubatan dan Sains Kesihatan kepada saudari Nurin bagi tujuan penyelidikan beliau.
Terima kasih.

"WAWASAN KEMAKMURAN BERSAMA 2030"
"BERILMU BERBAKTI"

Saya yang menjalankan amanah,

Profesor Dr Zamberi Sekawi

Dekan

Fakulti Perubatan dan Sains Kesihatan

Universiti Putra Malaysia

Tel: 603 - 9769 2602

----- Forwarded message -----

From: **NURIN IRDANIE BINTI JAFRIDIN / UPM** <196266@student.upm.edu.my>

Date: Mon, Jul 18, 2022 at 8:00 AM

Subject: Permission to Collect Data for Research Project in Faculty of Medicine and Health Sciences, UPM

To: <dean.medic@upm.edu.my>

Good morning, Prof. Dr. Zamberi Sekawi,

My name is Nurin Irdanie Binti Jafridin. I am a final-year nursing student. I am currently conducting my final year project research and I need Prof.'s approval for me to proceed with the data collection that would be collected among undergraduate nursing students in the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia.

My research title is **"ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG UNDERGRADUATE NURSING STUDENTS IN PUBLIC UNIVERSITIES IN MALAYSIA THROUGHOUT COVID-19 PANDEMIC."**

The main objective of this study is to study the attitude on the practice of e-learning (perceived usefulness; intention to adopt e-learning; ease of e-learning use; technical support; e-learning stressors; e-distant use of e-learning) among undergraduate nursing students in public universities in Malaysia throughout COVID-19 pandemic.

Here I attached the permission letter signed by my main supervisor, puan Rosna Abdul Raman, and the approval letter from the Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (JKEUPM) to conduct this study data collection.

I would like to thank you in advance for your time. I also appreciate Prof.'s kindness and I am looking forward to Prof.'s reply. Thank you.

Regards,

Nurin Irdanie



NURIN IRDANIE BINTI JAFRIDIN / UPM <196266@student.upm.edu.my>

Permission to Collect Data for Final Year Research Project in Faculty of Health Sciences, UiTM Puncak Alam.

DR. SITI KHUZAIMAH AHMAD SHARONI <sitik123@uitm.edu.my>

Tue, Aug 2, 2022 at 1:52 PM

To: 196266@student.upm.edu.my

Cc: NORAZLINA MD JAZLI <azlinajazli@uitm.edu.my>, PROFESOR DR ZULKHAIRI AMOM <zulkha2992@uitm.edu.my>

Assalamualaikum wbt dan Salam Sejahtera,

Ms Nurin Irdanie,

You can contact Madam Norazlina to assist you Puan Norazlina (+60 19-540 9985) and to get access to our nursing students.

Best regards,

Siti Khuzaimah Ahmad Sharoni, RN, PhD
 Head/ Senior Lecturer
 Centre for Nursing Studies
 Faculty of Health Sciences
 UiTM Selangor, Puncak Alam Campus
 42300 Selangor
 Email: sitik123@uitm.edu.my
 Tel : +603-3258 4305 / +6019 211 9284 ; Fax : +603-3258 4599

----- Forwarded message -----

From: **PROFESOR DR ZULKHAIRI AMOM** <zulkha2992@uitm.edu.my>

Date: Tue, Aug 2, 2022 at 11:08 AM

Subject: Fwd: Permission to Collect Data for Final Year Research Project in Faculty of Health Sciences, UiTM Puncak Alam.

To: DR. SITI KHUZAIMAH AHMAD SHARONI <sitik123@uitm.edu.my>

assalam khuzaimah

mohon bantu urus dan hbg pelajar ini terus jika bersetuju dengan permohonan beliau.

terima kasih banyak

zul

----- Forwarded message -----

From: **NURIN IRDANIE BINTI JAFRIDIN / UPM** <196266@student.upm.edu.my>

Date: Tue, Aug 2, 2022 at 10:01 AM

Subject: Permission to Collect Data for Final Year Research Project in Faculty of Health Sciences, UiTM Puncak Alam.

To: <zulkha2992@uitm.edu.my>

Good morning, Prof. Dr. Zulkhairi Hj Amom,

My name is Nurin Irdanie Binti Jafridin. I am a final-year nursing student from Universiti Putra Malaysia. I am currently conducting my final year project research and I need Prof.'s approval for me to proceed with the data collection that would be collected among undergraduate nursing students in the Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Puncak Alam.

- My research title is **"ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG UNDERGRADUATE NURSING STUDENTS IN PUBLIC UNIVERSITIES IN MALAYSIA**

<https://mail.google.com/mail/u/0/?ik=d02cb91160&view=pt&search=all&permmsgid=msg-f%3A1740027535031604661&dsqt=1&simpl=msg-f%3A...> 1/2

8/24/22, 10:16 PM

University Putra Malaysia Mail - Permission to Collect Data for Final Year Research Project in Faculty of Health Sciences, U...

THROUGHOUT COVID-19 PANDEMIC."

Therefore, I would like to obtain a name list and student emails of the undergraduate nursing students of UiTM Puncak Alam as my study sample. Here I attached the permission letter signed by my main supervisor, puan Rosna Abdul Raman, and the approval letter from the Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (JKEUPM) to conduct this study data collection.

I would like to thank you in advance for your time. I also appreciate Prof.'s kindness and I am looking forward to Prof.'s reply.

Regards,

Nurin Irdanie

Final Year Nursing Student

-

PROF DR ZULKHAIRI BIN HJ AMOM
 Dean
 FACULTY OF HEALTH SCIENCES
 UNIVERSITI TEKNOLOGI MARA CAWANGAN SELANGOR
 KAMPUS PUNCAK ALAM
 42300 PUNCAK ALAM
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 Fax: +603-32584599

Appendix I: Turnitin Summary

ATTITUDE ON THE PRACTICE OF E-LEARNING AMONG UNDERGRADUATE NURSING STUDENTS IN PUBLIC UNIVERSITIES IN MALAYSIA THROUGHOUT COVID-19 PANDEMIC

ORIGINALITY REPORT

24%	20%	17%	11%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.ncbi.nlm.nih.gov Internet Source	4%
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