

The attitude of Nursing Students towards E-Learning in Karachi

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Abstract:

Introduction:

Educational technology is essential in the modern era for creating chances and offering solutions, like online instruction for students. This study aims to measure the attitude of nursing students toward e-learning technologies and assess the positive and negative association of factors involved in enhanced understanding for the opposite result to recommend the nursing institute of future planning on e-learning methods.

Methodology:

This is a prospective, cross-sectional study conducted in private nursing institutes of Karachi. Students who are not involved in e-learning methods or who have taken a single session of e-learning were excluded from the study. Statistical package of social science version 22 was used for analysis, for independent variables frequencies and percentages were analyzed. Mean $\pm$ standard deviation was used to report descriptive data. A P-value of < 0.05 was considered significant.

Results:

The mean age of study participants was 26.78 ± 5.9 years, a maximum number of participants indicated good access with 99 (55.6%), while the most frequently used mode for e-learning was reportedly mobile with 123 (69.1%). The highest frequency was reported of neutral attitudes with 131 (73.6%) of participants while negative attitudes were indicated by 36 (20.2%) and positive attitudes were reported by only 11 (6.2%) of students. A significant association was recorded in intention to adopt e-learning (0.05) Ease of learning (0.04) and e-distance use of e-learning (0.01).

Conclusion:

The nursing educational system should make use of e-learning improvement programs that are more user-friendly and technically sound, allowing for the effective and efficient execution of virtual experiences of practical sessions.

KEYWORDS: e-learning, perspective, attitude, nursing education Bachelor of Science Nursing,

Post Nursing diploma Bachelor of Science Nursing

Introduction:

There are now unheard-of opportunities for learning thanks to the quick growth of information and communication technologies, the internet, and web-based applications. This circumstance has contributed to the recent exponential expansion of electronic learning (e-learning). It has helped educational institutions perform better academically.¹ E-learning has emerged as one of the most popular techniques in the educational system for the development of learning. Recently, the Covid-19 pandemic issue forced schools, colleges, and universities all over the world to temporarily close to stopping the spread of the coronavirus among students from 2019 to 2020². Technology is essential in this emergency for creating chances and offering solutions, like online instruction for pupils. For Pakistani universities, switching from conventional classrooms to online classes is a difficult undertaking. From March 2020, practically all universities in Pakistan offered online courses³. The term was defined pedagogically, with lecture notes posted on a website not being considered e-learning. Some staff members defined e-learning as the use of "e" electronic technology in education⁴. The execution of an e-learning plan is challenging due to staff members not having a shared concept or unified image of what constitutes e-learning. With employees who claim to be less confident and less computer literate, the word "e-learning" could be unintentionally creating a barrier. It would be fascinating to discuss whether the term "e-learning" should be retained or eliminated, as well as if it is still necessary to keep a high profile for the adoption of new technologies inside universities and the best ways to use them for teaching and learning⁵. To offer students better e-learning services, the higher education system has also been constantly updating and using new

technology. It largely depends on technology, and university administrations offer some kind of software that lets professors and students communicate via applications like Zoom, meet, classroom, and Blackboard Learning, among others⁶.

E-learning is quickly becoming the cutting-edge paradigm in higher education. Additionally, network-based e-learning platforms encourage both individual and group knowledge sharing. This can increase the effectiveness of learning, encourage knowledge innovation, and then strengthen the fundamental competitiveness of an individual or group⁷. Therefore, it is crucial to create an effective e-learning platform for managing resources for teaching and learning in higher education. Additionally, according to some academics, the students' opinions, attitudes, and intentions regarding the usage of this form of learning tool have a significant impact on the use of technology in a classroom. According to research, attitudes play a significant role in the acceptance, diffusion, and sustained use of ICT (Information Technology) in teaching and learning⁸.

This study aims to measure the attitude of nursing students towards e-learning technologies and assess the positive and negative association of factors involved in enhanced understanding for the opposite result to recommend the institute of future planning on e-learning methods.

METHODOLOGY:

This is a prospective, cross-sectional study conducted from March 2021 till October 2022 in private nursing institutes of Karachi. Nursing students of Bachelor (BSN & Post RN BSN) currently taking any form of e-learning education or training were asked to sign an informed consent

and provide data through a pre-structured validated questionnaire.

The sample size was calculated by OpenEpi version using % frequency of outcome factor in the population (p) 76%+5, confidence interval 95% with absolute error (d) 5%. The estimated sample size was 178 participants. Students who are not involved in e-learning methods or who have taken a single session of e-learning were excluded from the study. The study questionnaire was categorized into two parts, part I consist of demographic details of respondent such as name, age, gender, institute of study, access to technology, and duration of time spent on technology gadgets, while part II consist of attitude-related questions. Total 44 questions* and have 6 components. Each component has different questions, the first component described attitude towards the perceived usefulness of e-learning, while the second indicated an intention to adopt e-learning, the third part has ease of learning questions, the fourth part had questions regarding technical support requirements and availability while fifth part had questions related to e-learning stressors, and last part had e-distance use of e-learning related questions. All characteristics were measured using a questionnaire on a five-point Likert scale ranging from (1) "strongly agree" to (5) "strongly disagree." To obtain accurate findings for the study, valid and genuine questions about each of the variables were included in the survey questionnaires. All information gathered was examined for accuracy, completeness, and consistency before being categorized and structured using a Statistical package for social science version 22 was used to enter and analyze the data, frequencies, and percentages were

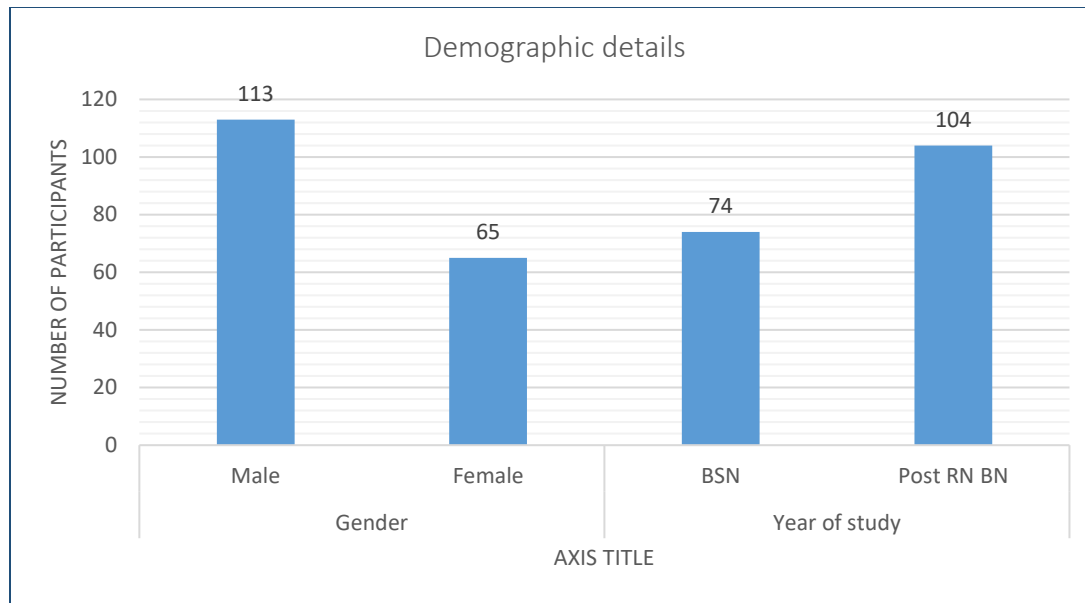
Figure 1: Demographic presentation of study participants.

analyzed for independent variables such as age, gender, institute and class of study. Mean $\pm$ standard deviation was used to report descriptive data such as age and overall response rates of the study. A Chi-square test was performed to check the significance of the study variables. < 0.05 p-value was measured as significant.

RESULTS:

Socio-Demographic details:

The gender distribution of 178 participants indicated, 113 (63.5%) were male while 65 (36.5%) were females. BSN students were 74 (41.6%) while Post RN were 104 (58.4%), enrolled participants. The mean age of study participants was 26.78 ± 5.9 years, however, upon the categorization of age into groups maximum frequency fell under the age group of 20 – 30 years old with 121 (68%) participants, the second most frequently reported age group was 30-40 years old with 49 (27.5%), while less than 20 years and more than 40 years had similar distribution with 4 (2.2%) students in each category respectively. Upon asking about access to technology, a maximum number of participants indicated good access with 99 (55.6%), while the most frequently used mode for e-learning was reportedly mobile with 123 (69.1%). Most respondents reported a maximum of 3-4 hours of usage of gadgets for e-learning in a day with 67 (37.6%) and 55 (30.9%). Upon answering about their level of computer experience, 27 (15.2%) stated they have an expert level of understanding, while the maximum had an intermediary understanding with 93 (52.2%). (Figure 1)



The questionnaire was divided into six categories and every category indicated a specific mean and standard deviation of results, Table 1 illustrated the mean scores of reported respondents' experience and attitude towards e-learning. The highest mean scores were identified in the perceived usefulness of highest use of e-learning and intention to adopt e-learning (2.55 ± 0.22 & 2.47 ± 0.28 respectively). The minimum and maximum values evaluated the

presence of maximum negative or positive answers, the highest negative marking was reported in ease of learning as respondents indicated difficulties in the learning procedure of e-learning. The p-value was significant in intention to adopt e-learning (0.05) Ease of learning (0.04) and e-distance use of e-learning (0.01) indicating positive association between mentioned factors and e-learning attitude of students. Table 01

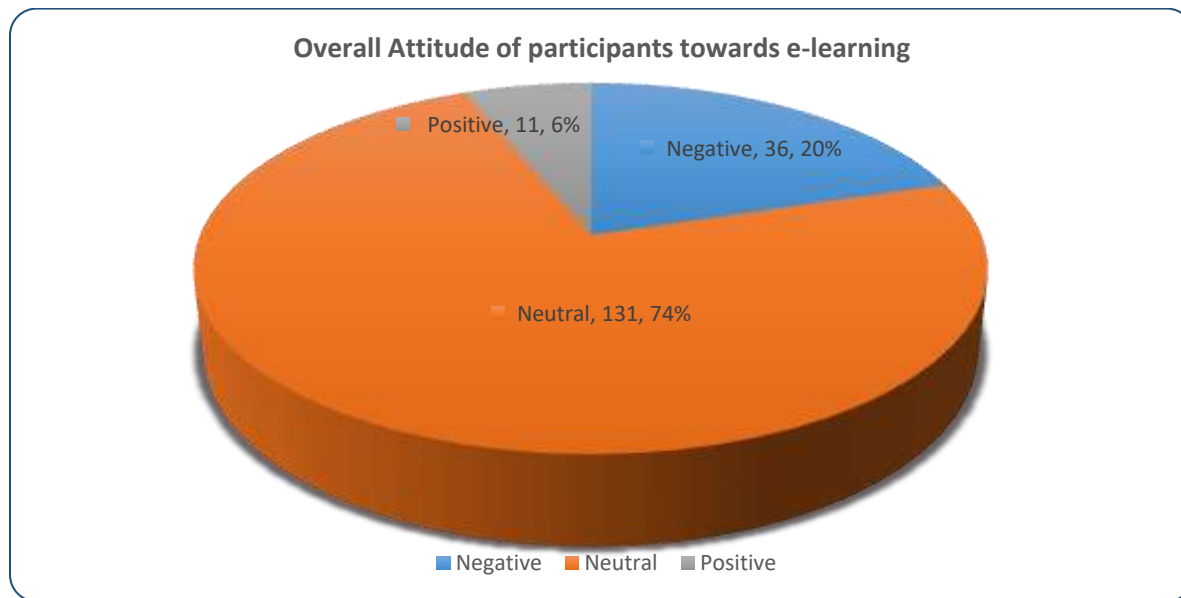
Table 01: Mean scores of study respondents.

Domain (N=Questions)	Course	Mean	S.D	Minimum	Maximum	P-Value
PERCEIVED USEFULNESS OF E-LEARNING (n=18)	BSN (n=74)	1.82	0.58	1.18	3.2	0.78
	Post RN (n=104)	1.52	0.52	0.71	3.5	
INTENTION TO ADOPT E-LEARNING (n=9)	BSN (n=74)	2.47	0.28	2.14	4.1	0.05
	Post RN (n=104)	2.1	0.12	1.14	3.8	
EASE OF LEARNING (n=7)	BSN (n=74)	2.6	0.85	2.51	4.8	0.04
	Post RN (n=104)	1.28	0.97	1.82	5	
TECHNICAL SUPPORT (n=4)	BSN (n=74)	1.59	0.71	1.52	3.4	0.09
	Post RN (n=104)	1.24	0.27	2.18	3.1	
E-LEARNING STRESSOR (n=5)	BSN (n=74)	1.58	0.82	1.91	4.8	0.21
	Post RN (n=104)	1.68	0.84	1.24	3.1	
E-DISTANT USE OF E-LEARNING (n=4)	BSN (n=74)	2.54	0.87	2.27	4.1	0.01
	Post RN (n=104)	2.55	0.22	1.92	2.8	

The results were analyzed by calculating the accumulated results of each respondent, less than 94 results were reported as a negative attitude, 141-95 results were reported as neutral results and more than 141 were considered positive results. The

highest frequency was reported of neutral attitude with 131 (73.6%) of participants while negative attitude was indicated by 36 (20.2%) and positive attitude was reported by only 11 (6.2%) of students. Figure 2

Figure 2: Attitude of participants towards e-learning.



The association between attitude toward e-learning and demographic details of study participants' data indicated the highest positive attitude in 20-30 year of age participants, while male participants had a comparatively higher positive attitude. The p-value of age categories and attitude toward e-learning was significant

(<0.005), indicating a significant difference of e-learning education acceptance within different age categories, as 20-30 years old students are more

positive towards e-learning as compared to 30 years and older age students. Course distribution has reported a significant difference between negative, positive and neutral attitudes with 11 (%) in BSN and 71 (%) in post-RN BSN students for positive attitude only, again indicating significant difference between BSN and Post RN student's attitude. Duration of time spent on internet has also signifies the positive attitude towards e-learning. Table 02

Variables		Negative Attitude	Neutral Attitude	Positive Attitude	P-Value
Age	< 20 years	0 (0%)	0 (0%)	4 (2.2%)	0.005
	20-30 years	1 (0.5%)	113 (63.4%)	7 (3.9%)	
	30-40 years	0 (0%)	18 (10.11%)	0 (0%)	
	> 40 years	0 (0%)	0 (0%)	0 (0%)	

Gender	Male	28 (15.7%)	79 (44.3%)	6(3.3%)	0.078
	Female	8 (4.4%)	52 (29.2%)	5 (2.8%)	
Course	BSN	2 (1.1%)	60 (33.7%)	11 (6.1%)	0.005
	Post RN BSN	0 (0%)	34 (19.1%)	71 (39.8%)	
Access technology to	No Access	3 (1.6%)	7 (3.9%)	0 (0%)	0.508
	Limited Access	12 (6.7%)	42 (23.5%)	7 (3.9%)	
	Good Access	21 (11.7%)	74 (41.5%)	4 (2.2%)	
Level of computer experience	No Skill	0 (0%)	4 (2.2%)	0 (0%)	0.88
	Beginner	10 (5.6%)	31 (17.4%)	5 (2.8%)	
	Intermediary	20 (11.2%)	68 (38.2%)	5 (2.8%)	
	Expert	6 (3.3%)	20 (11.2%)	1 (0.5%)	
Duration of time spent on internet	1-2 hours	20 (11.2%)	32 (17.9%)	3 (1.6%)	0.004
	3-4 hours	9 (5.0%)	52 (29.2%)	6 (3.3%)	
	5-6 hours	5 (2.8%)	27 (15.1%)	1 (0.5%)	
	Others	2 (1.1%)	12 (6.7%)	1 (0.5%)	
Internet Access	Mobile	25 (14.0%)	81 (45.5%)	11 (6.1%)	0.826
	Computer	9 (5.0%)	28 (15.7%)	0 (0%)	
	Cybercafé	1 (0.5%)	4 (2.2%)	0 (0%)	
	Others	1 (0.5%)	4 (2.2%)	0 (0%)	

Discussion:

The attitude of academic associations expending e-learning as an exercise was the preferable way to handle the challenge. A similar strategy was adopted by the medical education sector, where students were forced to finish their studies through online courses⁹. Based on their participation in e-learning activities during the pandemic, nursing students' attitudes toward e-learning are examined in this study. With a mean age of 26.78 ± 5.9 years and a mix of male and female participants, this study of bachelor-level and post-graduation nursing students is comparable to one done in Indonesia among medical students¹⁰. Compared to laptops and computers, mobile phones have become popular e-learning tools because of their flexibility and portability. This study's finding that the respondents used mobile phones for their online learning is similar to one from Pakistan¹¹.

However, usage of computers and mobile phones was about split 50/50 in one study carried out in India¹². According to a study done in Australia¹³, mobile devices are widely used for learning because they may happen whenever and wherever it is done. In terms of the proportion of participants who had never engaged in e-learning before, the findings of the survey done among BDS students in Nepal were comparable¹⁴.

Benefits and drawbacks of online learning

The main benefit of e-learning for the students in this study, which was comparable to the one done in Poland¹⁵, was the freedom to study at home. Other than that, this study, which is identical to another study, found that one of the main advantages was the decrease in lodging and transportation expenditures¹⁶. Since corporeal occurrence is not required in college, distance

learning does not become a significant problem when courses are online.

According to a UK study ¹⁷, the main obstacles to deploying e-learning are a lack of IT (Information Technology) skills and apprehension among academics and students to use it, our study participants reported the same issue as nearly half of the students in this research also cited the inability to engage with patients as a drawback. Instruction and erudition with actual patients in a clinical context are extremely important for nursing education and are very challenging to achieve with distance e-learning¹⁸. The adoption of virtual patients may be the answer to this problem. The design of virtual patients makes it possible to simulate real-world situations and aids in preparing students for dealing with fresh patients ¹⁹.

Effectiveness of online education compared to traditional face-to-face instruction

E-learning is shown to be decreasingly beneficial than customary face-to-face learning when compared to traditional learning methods ²⁰. Another Taiwanese study initiate that in terms of general public occurrence, societal contact, and students' pleasure, face-to-face learning was regarded as being more operational ²¹. According to a review done to gauge the effectiveness of e-learning programs in nursing education, students preferred lectures over e-learning. As opposed to the findings, a prior systematic review of e-learning demonstrated that it was similar to traditional learning in terms of the academic context. One study carried out in India found that pupils preferred a mix of face-to-face and online instruction ²². In research among Indonesian undergraduate students, dental students preferred classroom instruction over distance e-learning because the latter type of learning led to statement issues and provided less educational pleasure. Research indicated that students preferred a hybrid

approach that combined in-person instruction with online learning²³.

Respondents' perspectives on e-learning

Similar to studies piloted in Nepal ²⁴ and Pakistan ²⁵, this study had a satisfactory estimation of the value of online education. Students participating in a study to better understand the difficulties of e-learning agreed on the significance of integrating e-learning into nursing courses.

Overall opinion of online learning

In a survey of Iranian medical students' attitudes, 43.4% said that e-learning was helpful for their education ²⁶. Only 6% of the students in this study had a favorable opinion of online learning. In contrast, just 30.8% of participants in an Indian study displayed an overall happy attitude. Another study produced comparable results as well ²⁷. Additionally, in one study conducted at Jordanian universities, the overall satisfaction percentage for medical distance learning was just 26.8%; however, it was much higher for students who had previously taken distance learning courses in their medical schools ²⁸.

Conclusion

This study concludes that nursing students find e-learning relatively more time-consuming, difficult and confusing as compared to face-to-face learning. Understanding of electric gadgets, availability of the internet, and knowledge of glitches and solutions are rare, especially in developing countries. Nursing education requires specific and on training which is not possible in e-learning, however, proper training of faculties and students, along with user-friendly applications is necessary for a better e-learning experience.

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