

ATTITUDE OF NURSING STUDENTS TOWARDS E-LEARNING

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ABSTRACT

BACKGROUND: Nursing education has been using computers and internet related technology for research purposes since long but now, with advent of simulations, technology has become an essential element of basic professional training and continued professional development. Student management systems helps in handling inquiries, admissions and enrolling new students, managing students' assessments, maintaining records of attendance and handling the award of credit points or exit certificates. However, adopting a system without prior preparation can bring out frustrations. The dissatisfaction may be caused due to lack of awareness of the benefits, stress of using technology or budget issues for proper implementation. Such issues become more pronounced for developing countries having limitation of economical and technical expertise as compared to developed countries.

AIM: The aim of this study is to determine the attitude of nursing students towards e-learning.

METHODS: A quantitative, cross sectional study was carried out. One hundred and twenty nursing students participated in study. After informed consent, a closed ended, pre-validated, questionnaire with 5 point likert scale was filled and returned by all the participants. The data was analyzed by SPSS 20.

RESULTS: Of the total 120 students, 86% were females. The mean scores for perceived usefulness, intention to adopt, ease of learning and pressure to use e learning were 3.68, 3.74, 3.64 and 3.69 which are significantly more than the mean scores for technical support and e learning stressor i.e. 3.25, 3.05.

CONCLUSION: Our study shows that the nursing students are ready to adopt e-learning and recognize its uses in education but they consider the difficulties with technical support and stress of using technology as a hindrance.

KEY WORDS: E-learning, online course, nursing education, internet, attitude.

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INTRODUCTION

E-learning is a flexible term that refers to the improvement in knowledge and performance through use of computer and Internet technologies. It is defined generally as "the use of the Internet, intranets/extranets, audio and videotape, satellite broadcast, interactive TV, and CD-ROM, not only for content delivery, but also for interaction among participants."¹ Information and Communication Technology is a

new approach to the teaching-learning process, now widely accepted as a necessary tool for attainment of developmental goals. The development of Learning Management System since 1990² started application of technology in learning and thus continued successfully with the involvement of many universities and organizations. Since then, various technological aids like text-based systems, audios and videoconferencing are in use in distance education.

The nursing role is now rapidly evolving and so are the learning techniques. According to American Nursing Association (ANA) Scope and Standards of Practice. Standard 5 "a nurse must be able to utilize technology to measure, record, and retrieve healthcare consumer data, implement the nursing process, and enhance nursing practice".³ In 2010, ANA recognized e-learning benefits: "As the nurse of the future evolves, so must nursing education. Curricula must be designed to adequately prepare competent entry-level nurses. Online, virtual, simulated, and competency-based learning are attempts to expand opportunities to students and increase their efficiency."⁴ Again in 2002, ANA has stated that: "nurses and their employers are jointly responsible for creating an environment in which competent nurses

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can provide quality outcomes.” Following these guideline statements, a study from a developing country, Nigeria, states that though nursing students are still not using computer and internet related technology for medical education, it is now being stressed upon to include computers in nursing curriculum to keep up pace with the world.⁵ In a study conducted by Osman and Ahmad in 2003 in Oman,⁶ they found that web-assisted instruction is as effective as face to face instruction in terms of students’ achievements. Al Mussawi and Abdalraheem also found similar results in their study comparing the traditional teaching approaches and webCT at Sultan Qaboos University in Oman.⁷

Though nursing education has always been through traditional lecturing, with the advantage of delivering huge amount of information to a large number of nurses. Nurse educators are becoming well aware of the fact that e-learning is an innovative approach for delivering well-designed, learner-centered, interactive, and facilitated learning environment.⁸ The modifying role of the nurses and demand of the registration bodies, justifies the importance of continuing professional development and lifelong learning within the nursing profession.⁹ The rapid growth of online courses throughout the world has changed the learning environment for both the students and teachers. Students, faculty, staff and administrators are using technology extensively in their learning activities.¹⁰ E-learning has been in practice in nursing curriculum through LMS using quiz, notes/powerpoint presentations, videos and blogs. It increases student motivation, satisfaction and enjoyment in learning.^{11,12} Many universities and schools are now offering online degrees for bachelor and master training programs.

The aim of the study is to understand nursing students’s perceptions about e-learning and to know whether they are willing to change their

learning methodology from a traditional teaching and learning to a more advanced one, i.e. e-learning.

METHODS

Target population for this study included all nurses of the North Batinah Region of Oman. All second year nursing students of the two nursing institutes of North Batinah region were accessible for the study, thus 120 nursing students formed the sample for the study

The approval/permission was obtained from Advanced Studies review Board and Khyber Medical University Research and Ethics Board and Dean of Nursing institute of North Batinah Region of Oman for enrolment of their students after written informed consent. The basic facts and figures were obtained from the administration e.g. number of students, their enrollment criteria, curriculum and learning resources available at campus. Questionnaire¹³ was adapted from a study conducted in Iran and India for attitude analysis of the students. The final questionnaire included six factors inquired by varied number of items measured on 5 point Likert scale, ranging from strongly agrees to strongly disagree.

Data were entered and analyzed by the investigator in SPSS version 20. Frequencies and percentages were calculated for categorical variables like gender of the participants. Mean and Standard Deviation was calculated for the numerical variables like age of the participants. Overall mean score was categorized as favorable attitude (agree or strongly agree) and unfavorable (disagree or strongly disagree).

RESULTS

Demographics and baseline information about the participants included their age, gender, availability of technology, use of technology.

Students were in age range 18-22 years with mean of 19.2 years.

103 students were females (86%) and 17 were males (14%).

All students had smart phones and were active users of internet for Facebook and WhatsApp. They also had access to library computers and internet during their library hours mostly for their research work.

Perceived usefulness

Majority of the nursing students (94.5%) feel that e-learning can solve many problems of education. Eighty-three percent students thought that their access to education is increased with less time consumption. With the mean score of 4.19, Eighty six percent students said that their understanding of subject is enhanced and they can achieve better results as narrated by 72.2%. Eighty nine percent students reported that e-learning help them to conduct better research (mean score 4.29) while 91.7% are effectively using technology for their presentations. Eighty three percent students agree with the mean score of 4.19, that now the universities should adopt more and more e-learning for their students. However, thirty six percent disagree that learning through technology is as good as teacher, while sixteen percent thinks that e-learning has created more problems than it has solved. Overall mean for students’ perceived usefulness of e-learning is 3.68. (Table 1)

Intention To Adopt

Majority of the nursing students, seventy seven percent disagree that e-learning makes them uncomfortable (mean score 4.0) rather consider learning through internet is more fun (mean score 4.25). Ninety one percent students like the idea of using e-learning with mean score 4.11. Sixty one percent plan to participate in future e-learning courses and 69.5% students agree upon buying their personal computer. Overall mean for students’ intention to adopt e-learning is 3.74. (Table 2)

Ease Of Learning

Fifty to sixty percent students do not find any difficulty in learning from various websites. Seventy two percent can use computer and internet as easily as books from library

(mean score 3.92). Sixty one percent students have no difficulty in writing (mean score 3.69) with mean scores for reading and learning through internet are 3.53 and 3.64 respectively. However, 61.1% students consider that technology makes them slow (mean score 3.63) while 25% think that they are becoming slaves to technology. Overall mean score for ease of e-learning is 3.64. (Table 3)

Technical Support

The nursing students have almost neutral attitude towards the technical support required and available to them. Forty four percent agree that the institute has an updated website (mean score 3.29). Thirty nine percent agree that there is adequate technology (mean score 3.19) in their institute (3.11). Almost one third of the students (33.4%) seek satisfactory technical assistance now and then (mean score 3.22). Overall mean for technical support is 3.25. (Table 4)

E-Learning Stressor

Majority (58.3%) of the nursing students disagree about their lack of ability to use internet or being stressed by lack of technology availability in their department. However, the speed of internet is a limitation (mean score 2.56) for 55.6% students. There is no stress among the peers (mean score is 3) 44.4% agree that they are pushed by their teachers for use of technology for learning (mean score 2.78). Overall mean for e-learning stressor is 3.05. (Table 5)

Distant Use of e-learning

Seventy five percent of the nursing students agree that online education should be offered due to its multiple benefits. Students can learn from home in remote areas (mean score 4.82) thus avoiding travel related stress (mean score 3.94) and can continue studies after marriage (mean score 3.69). (Table 6)

DISCUSSION

E-learning is one of the learning strategies that has gained robust popularity among the nursing edu-

cationist. Literature search reflects many publications supporting the use of technology, but there are some articles describing the conflicts of technology users.¹⁴ It is not an easy decision for the institutes to implement e-learning, being highly favored by the educationists following constructivism theory but the resource intensive set up is a limitation. Rather than investing in technology, institutions and departments should first recognize the particular needs of academics in each discipline.¹⁵

Our study measures the attitudes of the Nursing students about E-learning on a five point likert scale, addressing six main factors i.e. Perceived usefulness, intention to adopt, ease of learning, technical support, e-learning stressor and pressure to use e-learning.

The strength of our study is that this is the first study conducted in the region with focus on e-learning in nursing education. From this study, it is evident that the nursing students consider e-learning to be very useful and they are willing to adopt it. So e-learning can be very successfully implemented in North Batinah region of Oman. This study also suggests that improved computer labs and technical support will overcome the technical difficulties and further enhance nurses' learning.

In our study, 95% of the nursing students agree that e-learning can solve many problems of nursing education. A study compared the students in Gulf found that despite of few differences in the students' commitment and confidence with technology, they perceive e-learning as very useful.¹⁶ Eighty six percent of the students perceive that their understanding of subject is enhanced and they can attain better results with easy access to education through e-learning. Overall 60% students have very strong perceptions for the usefulness of e-learning while 40% are either neutral or disagree to

some extent towards uses of e-learning over traditional learning.

Sixty one percent plan to enroll and attend future e-learning courses and 69.5% students agree upon buying their personal computer. Overall our study shows that 85% of the nursing students have strong intention (mean score 3.74) to adopt e-learning. A study from USA shows that majority of the students are not ready for using e-learning.¹⁷ This is in contradictory to our study, may be due to the fact that students have very positive perception about the usefulness of e-learning and that is a reason that they shows intention to adopt it. A survey of public health nurses shows direct relation between intention to use e-learning and perceived usefulness of e-learning¹⁸.

In our study, Sixty percent of nursing students have no difficulty in learning, gaining information and writing through technology with mean scores of 4.06 and 3.86 respectively. Seventy two percent of the nursing students can use internet as easily as library. This may be due to the fact that overall population is technology friendly and used to using smartphones, computers and internet. This is contradictory to a survey of Canadian nurses¹⁹ that found nurses' internet use increased only 8% in two years time in comparison with 42% for doctors. Further probing into the situation suggested that nurses use of internet was limited by lack of technical knowledge.

Our study shows that 61% students think that technology makes them slow. These results are supported by a survey of undergraduate nursing students by Rangel et al. stated the main cause of minimal use of internet for patient health information by the nursing students in their routine clinical postings was lack of technical knowledge of using and gaining information from internet as the students said that they got lost and lots of time was wasted.²⁰

A study done in Iran, analyzed that the students perceive that high-

est rated disadvantage of e-learning system was “technology issues”.²¹ It is well supported by study conducted by Helen which shows the potential barriers to use of technology are the computer literacy, perceptions of e-learning as time consuming lack of work based support.²² Moule et al, has recommended that revision of training and information to support e-learning and computer use should remain on the HEI agenda.²³

Distant learning can be used in situation arising from stress of living in remote areas with long distance from home to the learning institute. Seventy five percent of the nursing students agree that online education should be offered so that students can learn from home avoiding travel related stress and can continue studies after marriage (mean score 3.69). Overall our study shows favorable attitudes of the nursing stu-

dents towards e- learning and shows intention to adopt it, despite of lack of adequate technical support which is causing stress in 48% nursing students. A study by Elango R and Gudep V shows that the paramedical students are ambivalent towards using computers for learning and for patient care.²⁴ Our study is supported by a study from Tanzania University, suggested that despite limited access to technologies, students

TABLE 1: PERCEIVED USEFULNESS OF E-LEARNING

1	PERCEIVED USEFULNESS	SDA	DA	N	A	SA	MEAN
a	E-learning can solve many of the educational problems.	-	-	5.6	52.8	41.7	4.36
b	E-learning saves time.	-	5.6	11.1	38.9	44.4	4.22
c	E-learning improves access to learning material.	-	-	16.7	58.3	25	4.08
d	E-learning helps me to achieve better results.	-	13.9	13.9	47.2	25	3.83
e	E-learning increase learner’s engagement in learning.	-	2.8	47.2	33.3	16.7	3.64
f	E- learning improve teacher and students interaction	2.8	8.3	27.8	44.4	16.7	3.64
g	E-learning increase my understanding of concepts.	-	-	13.9	52.8	33.3	4.19
h	E-learning has created more problems than it solved.	11.1	33.3	38.9	11.1	5.6	2.67
i	E-learning is too time consuming to use.	5.6	16.7	33.3	33.3	11.1	2.72
j	E-learning has had little impact on me.	5.6	36.1	30.6	22.2	5.6	2.86
k	E-learning is as informative as the teacher.	8.3	27.8	41.7	16.7	5.6	2.83
l	E-learning will never replace other forms of teaching and learning.	2.8	16.7	44.4	25	11.1	2.75
m	E-learning help to reinforce my knowledge.	-	-	19.4	58.3	22.2	4.03
n	E-learning help me to organize my work	-	2.8	19.4	58.3	19.4	3.94
o	E-learning help me to catch up missed lectures.	2.8	5.6	22.2	44.4	25	3.83
p	E-learning increase my effectiveness to create presentations.	-	-	8.3	50	41.7	4.33
q	E-learning increase my research capability.	-	2.8	8.3	50	38.9	4.25
r	Universities should adopt e-learning for their students.	-	2.8	13.9	44.4	38.9	4.19

TABLE 2: INTENTION TO ADOPT E-LEARNING

2	INTENTION TO ADOPT	SDA	DA	N	A	SA	MEAN
a	E-learning makes me uncomfortable because I don’t understand it.	30.6	47.2	13.9	8.3	-	4.0
b	E-learning is a de-humanizing process of learning.	5.6	30.6	47.2	13.9	2.8	3.22
c	I dislike the idea of using E-learning.	36.1	47.2	8.3	8.3	-	4.11
d	I am not in favor of E-learning as it leads to social isolation.	16.7	33.3	25	16.7	8.3	3.33
e	E-learning doesn’t interest me.	27.8	44.4	16.7	8.3	2.8	3.86
f	I plan to participate in future e-learning courses.	-	5.6	33.3	44.4	16.7	3.72
g	I plan to buy a computer to be able to follow lectures notes online.	5.6	2.8	22.2	55.6	13.9	3.69
h	Using E-learning makes learning fun.	2.8	-	5.6	52.8	38.9	4.25
i	I don’t know what I would do without E-learning.	8.3	11.1	19.4	41.7	19.4	3.53

TABLE 3: EASE OF LEARNING

3	EASE OF LEARNING	SDA	DA	N	A	SA	MEAN
a	Using E-learning is more difficult than using the library.	27.8	44.4	19.4	8.3	-	3.92
b	I can't read the lectures notes through the web.	19.4	30.6	33.3	16.7	-	3.53
c	I can't learn courses through the web.	25	33.3	22.2	19.4	-	3.64
d	It is difficult to acquire any significant information by using internet.	27.8	38.9	27.8	2.8	2.8	3.86
e	It is difficult to express my thoughts by writing through E- learning.	30.6	30.6	22.2	11.1	5.6	3.69
f	I find that using the internet make me slow.	22.2	38.9	19.4	19.4	-	3.63
g	I feel we are becoming slaves to technology.	19.4	19.4	38.9	19.4	2.8	3.33
h	My interaction with E-learning is not understandable.	30.6	30.6	13.9	16.7	8.3	3.58

TABLE 4: TECHNICAL SUPPORT

4	TECHNICAL SUPPORT	SDA	DA	N	A	SA	MEAN
a	My institute has an updated website.	11.6	11.6	30.6	27.8	16.7	3.29
b	My institute facilitates e- learning training programs.	2.8	13.9	47.2	22.2	13.9	3.31
c	My institute has adequate technology for e- learning.	8.3	16.7	36.1	25	13.9	3.19
d	I seek technical assistance from campus support services.	5.6	16.7	44.4	16.7	16.7	3.22

TABLE 5: E-LEARNING STRESSOR

5	E LEARNING STRESSOR	SDA	DA	N	A	SA	MEAN
a	I feel anxious about my ability to use e learning effectively.	13.9	44.4	19.4	19.4	2.8	3.47
b	My department computers stress me.	22.2	33.3	16.7	22.2	5.6	3.44
c	Slow internet connections stress me.	5.6	25	13.9	30.6	25	2.56
d	I feel pressured by my teachers to use E-learning for my research/ learning activities.	5.6	19.4	30.6	36.1	8.3	2.78
e	I feel pressured by my peers to use E-learning.	5.6	27.8	33.3	27.8	5.6	3.0

TABLE 6: E-DISTANT USE OF E- LEARNING

6	PRESSURE TO USE	SDA	DA	N	A	SA	MEAN
a	E-learning should be offered fully online to reach students living in remote areas.	2.8	-	19.4	47.2	27.8	4.82
b	E-learning should be used to reduce travel related stress.	-	2.8	25	47	25	3.94
c	E-learning should be adopted to allow married students to balance family and Study demands.	5.6	11.1	22.2	30.6	30.6	3.69
d	E-learning should be adopted to allow working students to study from home.	2.8	5.6	25	36.1	30.6	3.86

have positive perceptions about using e-learning technologies.²⁵

CONCLUSION

Our study shows that the students are ready to adopt E -learning and recognize its uses in Nursing education. However they consider the

difficulties with technical support and stress of using technology as a hindrance.

This study recommends that e learning is highly valued by nurses in their education. However technical support needs to be updated as strong technology set up makes the

back-bone of e learning. In order to understand the underlying reasons for students' attitude, a qualitative study of the factors will help in implementing strategies to produce more positive attitude towards e learning.

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NOTES ON CONTRIBUTORS

The study was part of NA Master in Health Professions Education. BJ supervised, AS and SA facilitated in data analysis, write-up & editing the drafts.

CONFLICT OF INTEREST

Authors declare no conflict of interest.

ETHICS APPROVAL

Obtained from Khyber Medical University Research and Ethics Board.

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