International Journal of Community Medicine and Public Health
Bhatta R et al. Int J Community Med Public Health. 2018 Dec;5(12):5041-5044
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20184775

Original Research Article

E-learning among health science students of Nepal

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Received: 16 September 2018
Accepted: 09 October 2018
Accepted: 11 October 2018

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ABSTRACT

Background: E-learning is a method of teaching and learning using electronic media. It is also called web-based learning, online learning, distributed learning, computer-assisted instruction and internet-based learning. With the development of information technology, the use of e-learning has rapidly increases. E-learning is becoming omnipresent in higher education and increases the student's motivation and satisfaction in learning.
Methods: The descriptive cross sectional study was conducted at three different health science colleges among bachelor level students of Public Health, Pharmacy and Nursing at Kathmandu, Nepal. Total 135 respondents were randomly selected. The self administered questionnaire was used for the data collection and the obtained data were analyzed by using SPSS version 16.
Results: Study shows that majority of respondents were from 19-22 years and 71.9% were female. All the respondents use electronic devices for learning and majority (97.8%) believes that electronic device influence the academic performance of students. Laptop is the commonly used electronic device followed by smart phone. Among the respondents only 63.7% follow the correct posture. Similarly, majority (80.7%) of the respondents spent 1-4 hours on electronic device for learning purpose that is mainly used for searching clinical guidelines, reference drug guidelines and journal articles.
Conclusions: The use of electronic device is common among the health science students for learning. The uses of such devices have positive effect on their education since they get updated information quickly as needed. However necessary guidance is necessary to get appropriate sites and for limiting excessive use such devices.

Keywords: e-learning, Health science students, Electronic device

INTRODUCTION

Educational learning is the process by which the learners gain knowledge about the related subject matter. E-learning is a method of teaching and learning using electronic media.[1] E-learning is also called web-based learning, online learning, distributed learning, computer-assisted instruction and internet-based learning.[2] The new system that is being used widely these days is blended learning where teacher teaching multimedia classes are combined with e-learning technology.[2]

Introduction of e-learning into academics had made learning more active and teachers as facilitators and mentors.[1] Medical and health education is constantly growing at a rapid speed and to keep the upcoming health professionals in par with the competitive world.[2,3] It is necessary to have easy access with latest information and evidences. Studies have shown that among the health science students e-learning can improve the efficacy of academic deliverance and make the learning sessions more attractive and retainable.[2]

E-learner uses the online material for learning purposes; usually it allows learner an independency and better environment for comfortable learning.[4] During e-learning the learner is independent and can conduct learning independently. On the other hand e-teaching is instructions given via an electronic media in both virtual and face to face classrooms and e-teaching enable online interactions and online sharing of course material.[5] In present scenario developing countries are also growing in the use of computers and internet based learning as compared to developed countries.[6]

It is believed that e- learning provides new opportunities to both the students and the higher education institutes by creating new and exciting opportunities.[7] Some of the advantages of e-learning include: flexibility, cost-effectiveness, capability to gather students from widespread locations that can participate in lectures and group discussion in real-time, also bring instructors with expertise not locally available and satisfaction.[8] Although the e-learning is beneficial among the health science students, however in low-income countries like Nepal only limited students have access to the e-learning activities. Studies have shown that unavailability of the computers and access to internet, financial support in terms of administration and faculty time and training are seen as challenges for e-learning.[2]

METHODS

This is a descriptive cross sectional study conducted in three different health science colleges at Kathmandu Nepal. Study period was from April 2017 to July 2017. Before conducting the study ethical approval was obtained from the Nepal Health Research Council. Formal permission was taken from the concerned authority of college and verbal consent was taken from the students before collecting the data. Interview with structured questionnaire was used for collecting the data. Total sample size of the study was 135. Bachelor level students were selected for the study by using simple random sampling technique based on proportionate allocation. Those students who were selected and willing to participate in the study were only interviewed and those who were not interested in the interview were excluded from the study. The data were edited, organized, coded, entered and analyzed through SPSS (Statistical Package for Social Science) software program.

RESULTS

All the 135 respondents participated in the study among them majority (87.4%) were between the aged 19 and 25 years of age. Most of the respondents (71.9%) were female. All the respondents use electronic devices for learning and majority of (97.8%) believe that use of electronic device influence their academic performance. Among the respondents, majority of them 83.7% have laptop 64.4% have smart-phone, 25.9% have desktop computer and 23% have iPad/tablet.

For academic learning, laptop was the most commonly used (48.8%) electronic device followed by smart-phone (46.8%) whereas iPad/tablet and desktop computer were limitedly used only by 2.2% of the respondents.

Table 1: Mostly used electronic device.

Electronic device	Frequency (n=135)	Percentage (%)
Laptop	66	48.8
Smartphone	63	46.8
IPad/Tablet	3	2.2
Desktop computer	3	2.2

Health students have been using the different electronic devices for various purpose related to their studies. Majority (54.8%) of them have used it for searching the clinical guidelines, and other guidelines that are necessary for their academic purpose. Similarly 54.1% have used it for searching reference drug guideline and about 42% have used it for the purpose of searching the different journals and various necessary articles.

Table 2: Purpose for using electronic device (multiple response).

Purposes	Frequency (n=135)	Percentage (%)
Search guidelines (clinical guidelines and other guidelines)	74	54.8
Search reference drug guidelines	73	54.1
Search journals and related articles	57	42.2
Others	6	4.4

Regarding the time that they spend using the electronic devices, majority (80.7%) of the students spent 1-4 hours in a day using electronic device for learning purpose, about 14.1% spent 8-12 hours, 3% spend 4-8 hours and 2.2% spend more than 12 hours using electronic devices.

Out of the total respondents only 63.7% told that they use correct position while using electronic device, where as 59.3% of them told that they lie-down in bed while using laptop, 19.7% use it with a hunched back and protruding head back position,18.6% use it by bending their head forward and 2.3% use it in a standing position.

Regarding the commonly surfed sites, 91.1% of the respondents commonly surf Google, 46.7% surf Wikipedia, 20.7% surf Medline, 22.2% surf Pubmed and 3.7% surf other sites such as YouTube, Facebook, Medscape etc.

Table 3: Commonly surfed sites.

Sites	Frequency (n=135)	Percentage (%)
Google	123	91.1
Wikipedia	63	46.7
Medline	28	20.7
Pub-Med	30	22.2
Others	5	3.7

*Multiple responses

Majority (85.2%) of the respondents responded that they are self-motivated to use electronic devices while 50.4% are motivated by teachers, 34.1% are motivated by friends, 20% are motivated by their own parents and 5.2% are motivated by others such as relatives and juniors.

Regarding the influence of electronic devices in their academic performances, majority (87.4%) of the respondents believe that the use of electronic device positively influence the health science students on their academic performances, however 7.5% responded that it doesn't have any such effects, whereas about 5% of them mentioned that it has negative influence on their academic performances.

Regarding the usefulness of electronic device for learning, majority (91.1%) of the respondents find electronic devices useful for learning purpose saying that it helps to reduce confusion and increase clarify about the course content and increase their confident level. It even helps to gain better knowledge about subject matters. However, 8.9% find electronic devices not as useful for learning as it is time consuming and expensive to use electronic devices for learning. They also state that textbook knowledge is sufficient.

Table 4: Challenges while using electronic device.

Challenges	Frequency (n=135)	Percentage (%)
Irregular electricity	82	60.74
Electronic device maintenance problem	45	33.33
Expensive internet service	5	3.70
Others	3	2.23

*Multiple responses

Regarding the challenges of using the electronic devices for learning majority (60.74%) of the respondents responded that due to the irregular electricity (frequent power cut) it is difficult to use the electronic devices, while 33.33% told that it is difficult and expensive to repair and maintain such devices. Similarly, 3.7% told that the internet is not easily accessible and also expensive whereas 2.23% told that they could easily access the needed article and some of the needed articles are not in open access so they need to be paid, hence expensive to purchase.

DISCUSSION

Introduction of e-learning into academics had made learning more active and teachers as facilitators and mentors.[1] E-learning is a method of teaching and learning using electronic media.[1] E-learning is also called web-based learning, online learning, distributed learning, computer-assisted instruction and internet-based learning.[2] In developing countries including Nepal, e-learning is only in limited use. This study assesses the scenario of e-learning among the bachelor level health students studying Public Health, Pharmacy and Nursing in three different campuses under Purbanchal University.

Health students need dynamic leaning environment, only the textbooks and the class lectures are not enough to get the relevant and appropriate knowledge. Hence to support the existing knowledge the students needs e-learning environment. Studies show that e-learner uses the online material for learning purposes which allows learner an independency and better environment for comfortable learning.[4] During e-learning the learner is independent and can conduct learning independently.

Developing countries are also growing in the use of computer and internet-based learning as compared to the past years.[6] Although the e-learning is beneficial among the health science students, however in low-income countries like Nepal only limited students have access to the e-learning activities. Studies have shown that unavailability of the computers and access to internet, financial support in terms of administration and faculty time and training are seen as challenges for e-learning.[2] However this study shows that all the respondents were using different electronic devices for learning purpose, most commonly used (48.8%) device was laptop followed by smart phones, desktop computers and IPad/tablets.

It is believed that e-learning provides new opportunities to both the students and the higher education institutes by creating new and exciting opportunities.[7] E-learning is beneficial for the students when they have limited access with the text books and reference books. Students can also take advantage of e-learning since it is flexible, cost-effective, and provide opportunity to participate students in real-time lectures and group discussions.[8] It also support to share the expert sessions to those places where the faculty members are not available.[8] In this study the respondents have used the electronic devices for searching clinical guidelines and other guidelines (54.8%) for their academic purpose, similarly significant number (54.1%) of them have used it for searching reference drug guideline and for searching different journal articles.

While using the electronic devices for academic learning student should also be aware about the appropriate time that they should spend, and proper posture that they should follow. Using the electronic devices for excessive time and with wrong posture is not good for health. The study shows that majority (80.7%) of the respondents spent 1-4 hours/day on electronic device for learning. However, 16.3% of the respondents were found to be using the devices for more than 8 hours. Similarly, 63.7% of the respondents responded that they use the correct posture while using the electronic devices whereas still about 36% of the respondents were found to be not using the correct posture. Such situation can cause serious hazards in the health of the students, so proper awareness is necessary.

Using appropriate site provide better learning opportunities to the students. The study shows that majority (91.1%) of the respondents commonly surf Google, 46.7% surf Wikipedia, 20.7% surf Medline 22.2% surf Pubmed and (8.9%) surf other sites such as YouTube, Medscape, Facebook etc.

In conclusion, the use of electronic devices is increasing among the health science students. Especially in the low resource setting it has various benefits on the students and provides better learning opportunity to the students. However the study shows that the students still need proper information and knowledge on selecting appropriate sites that they need to surf to get appropriate knowledge. Similarly the study also shows that the students must also be aware about the time that they spend and the posture that they follow while using the electronic devices.

ACKNOWLEDGEMENTS

I would like to thank Nepal Health Research Council (NHRC) for providing ethical approval. Similarly I would also like to thank Yeti Health Science Academy, Valley College of Technical Sciences and Little Buddha College of Health Science for their support in conducting this research. I also like to express my gratitude to all the co-authors for their support.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Bhatta R, Shrestha R, Shah SK, Karki R, Chaudhary A, Gupta RK. E-learning among health science students of Nepal. Int J Community Med Public Health 2018;5:5041-4.