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Original article

Factors Affecting Mobile Learning Adoption in Healthcare Professional Students Based on Technology Acceptance Model

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SUMMARY

Mobile learning is one of the pivotal advances in the 21st century education. However, other than its performance and function, its acceptance by the students is a very important factor in successful implementation of mobile learning. The present study was an attempt to determine the effective factors in acceptance of m-learning and determine the type of relationship among the factors in the undergraduate healthcare professional students based on technology acceptance model (TAM). This survey study was carried out as a descriptive-analytical work. A total of 310 students in Saveh University of Medical Sciences in Iran were selected in 2018. Data gathering tool was a researcher designed questionnaire designed based on technology acceptance model of which validity and reliability were supported beforehand. Data analyses were carried out through structural equation modeling and confirmatory path analysis in LISREL. The mean score of all variables (perceived usefulness, perceived ease of use, attitude and intention to use, and actual use) except the external factors were higher than base mean score (m ≥ 3), which indicates good acceptance of mobile learning among the students. The lowest mean score was obtained by teacher's support of using mobile for learning purposes (an external factor). There was a significant correlation among the external factors, perceived usefulness, attitude and intention to use, and actual use ($p < 0.05$).The results supported effectiveness of the constructs of technology acceptance method and its ability to predict acceptance of mobile learning. TAM factors were significant determinants of mobile learning acceptance.

Key words: **mobile learning, adoption, undergraduate healthcare professional students, technology acceptance model**

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INTRODUCTION

Mobile learning (m-learning) is defined as learning using mobile technologies (cell phones, tablets, laptops, digital and personal assistants, and the like) (1-3). In another definition, m-learning is learning to acquire any type of knowledge, attitude, and skill through mobile technologies anytime and anywhere, so that it leads to behavioral change (4). M-learning is one of the pivotal changes in the 21st century education. The most important aspect of m-learning, as emphasized by different references, is that it enables learning anywhere and anytime (1, 4, 5). M-learning has prepared a ground where realization of all educational goals like independent learning, autonomy in learning, learning anywhere and anytime, comprehensive independence in learning, the right to choose contents based on interests, and more realistic recognition of personal differences in students now appear easier to achieve (4). The fact that mobile technology is easy to carry creates a flexible learning opportunity (learning anywhere and anytime) (1, 6).

It is clear that given the potential capability and facilities provided by m-learning, it can facilitate learning in medical sciences students as well (2, 7-10). It is most effectively used by medical students who need to undergo a continuous learning process (11). Smartphones are very popular in medical education and are used for a variety of learning purposes including access to information and references, a guide in rounding, as a way to facilitate and improve learning process in clinical practicum, and a solution to have better problem-based learning (12-15).

In addition, changes in medical care approach from individual approach to society approach entails learning in a more independent and diverse fashion in learning environment. This is more important where access to resource is not easy and the interests and curiosity to learn increase (16). It is notable however, that m-learning is still a work in progress, which is going to be an indispensable part of the learning process in the future and a key element in blended learning (5, 16).

A study was conducted to assess the vision of medical and nursing students about the benefits of using mobile technology in education. In summary, the results showed that students considered mobile technology to be useful for learning purposes (17). Another study was designed to investigate the effect of mobile health method on emergency nurses' knowledge about Emergency Severity Index triage in Iran. The results indicated that the mobile program was an attractive learning method for emergency nurses because with this technique, teachers empower nurses to take more responsibility for their own learning (18).

The way that a learning technology is accepted has an important effect on students' intention to put the technology into use (19, 20). In other words, when acceptance of a technology is low in students, utilization is low among them (21). Like other information systems, acceptance by the users is a major indicator of success of the system. Therefore, acceptance is the main concern in success of advanced systems (22).

Technology Acceptance Model (TAM) is one of the most effective research models to predict acceptance behavior in individuals of different information and applied technologies (23, 24). There are several factors effective in acceptance of information and telecommunication technology (ITC),

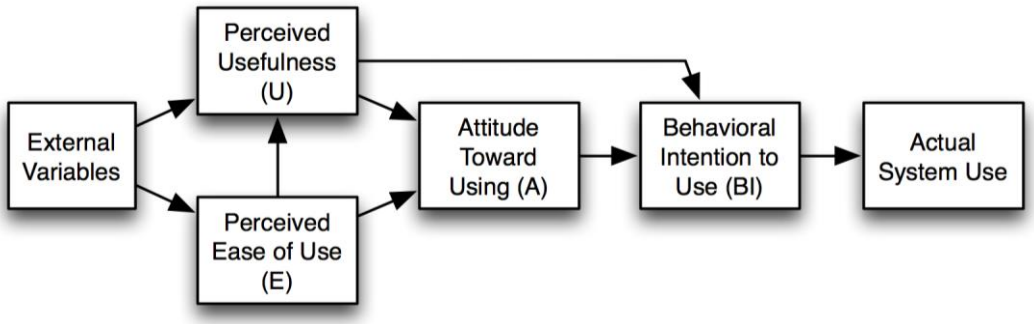

Figure 1:- *Technology Acceptance Model (TAM)*

which are categorized into six categories in TAM (Figure1). In addition to prediction, the model also follows a descriptive approach so that the managers can use it to realize why a specific system could be rejected by the users and then find effective modification to solve the problem (25).

Taking into account the potential importance of m-learning in medical education, it is essential to invest in educational process based on this method in the field of medical sciences. Therefore, we need to determine acceptance level of m-learning before using it as a new step in e-learning. Through this, we can implement the new approach with thorough knowledge in educational environment and universities in particular.

AIMS

The present study was an attempt to introduce and determine the effective factors in acceptance of m-learning and determining the type of relationship among the factors in the undergraduate healthcare professional students based on TAM.

PARTICIPANTS AND METHODS

This survey study was carried out as a descriptive-analytical work in 2018. The participants were selected among nursing, midwifery, operation room technology, and anesthesia students in Saveh University of Medical Sciences in Iran. All the participants had completed at least one semester in the university and entered the study through census method (n = 328). Study inclusion criteria consisted of being an undergraduate healthcare professional student, having passed at least one academic term, and willingness to participate in the study. Exclusion criterion was failure to fill out the questionnaire completely. To develop the questionnaire, an accurate study was carried out on the model and available questionnaires in this field and the questionnaire was developed based on the results. The first part of the questionnaire covered demographics (six questions) and the second part covered m-learning adoption (30 questions), which in turn consisted of six sections (five questions for external variable, six questions for perceived usefulness, six questions for perceived ease of use, five questions for attitude toward using, four questions about behavioral intention to use, and four questions for actual use). Mean scores above 3 were interpreted as good acceptance (26). The questions were designed based on the Likert's five point scale (5 = completely agree, 4 = agree, 3 = not sure, 2 = disagree, 1 = completely disagree).

After verifying validity and reliability of the questionnaire, it was administered. Content validity was confirmed by 10 members of faculty board, who were experts in this area of study. Based on the feedbacks, a few changes were made in the questionnaire. Reliability of the questionnaire was supported through test/retest method and correlation coefficient (r) was obtained equal to 0.91. Moreover, internal consistency and Cronbach's alpha (0.88) were calculated. In observance of ethical concerns, the participants were informed about the objectives of the study and ensured about confidentiality of the information so that the questionnaires were filled anonymously and participation was voluntary. The study was registered with Ethics Committee, Saveh University of Medical Science under No. IR.SAVEHUMS.REC1396.33. Data analyses were done using descriptive and inferential statistics like structural equation modeling (SEM), and confirmatory path analysis in LISREL.

RESULTS

Out of 328 distributed questionnaires, 310 were returned (response rate = 94.51%). Table 1 lists the demographics of the participants based on gender and field of study. Table 2 lists mean and standard deviation of the acceptance factors of m-learning in the partici pants.

Table 1. *Frequency distribution of the students based on demographic information*

Demographics	Elements	Frequency (%)
Field of study	Nursing	120(38.7)
	Midwifery	41(13.22)
	Operation room	70(22.58)
	Anesthesia	79(25.48)
Gender	M	101(33.87)
	F	209(66.12)
Semester	2	92(29.67)
	4	89(28.7)
	6	43(23.54)
	8	56(18.06)

Table 2. *Mean and standard deviation of perception of the students of m-learning acceptance*

Factor	Mean	SD
External factors	2.58	1.75
Usefulness	3.9	1.96
Ease of use	4.23	0.85
Attitude	3.76	1.23
Intention to use	4.12	2.08
Actual use	3.93	1.67

As listed in Table 2, the mean score of all the constructs except the external factors is higher than the base mean score. This indicates good acceptance in terms of these constructs.

Taking into account that the correlation matrix is the basis of analysis in causal models, the cor-relation matrix of the variables under study are listed in Table 3. As listed, value of "r" for all the items is positive and significant ($p < 0.01$). That is, there is a significant, direct and one-by-one rela-tionship between all the variables.

The variables were also tested using confirmatory path analysis and the results are listed in Table 4.

Table 3. *Correlation matrix of the variables of TAM*

Variables	Internal factors	Perceived usefulness	Ease of use	Attitude	Intention to use	Actual use
External factors	1					
Profitability	0.24	1				
Ease of use	0.35	0.32	1			
Attitude	0.33	0.42	0.21	1		
Intention to use	0.27	0.45	0.29	0.43	1	
Actual use	0.27	0.44	0.27	0.47	0.5	1

Table 4. *Confirmatory path analysis results*

Hypothesis	Predictor	Criterion	R^2 (explained variation)	B (path coefficient)	T-value	Result
H1	External factors	Usefulness	0.2	0.22	3.55	Confirmed
H2	External factors	Ease of use	0.28	0.27	5.31	Confirmed
H3	Ease of use	Usefulness	0.25	0.26	4.78	Confirmed
H4	Ease of use External factors	Usefulness	0.3	0.31 0.25	5.89 3.94	Confirmed
H5	Ease of use Usefulness	Attitude	0.31	0.29 0.36	6.81 5.47	Confirmed
H6	Usefulness Attitude	Intention to use	0.36	0.33 0.35	6.12 6.47	Confirmed
H7	Intention to use	Actual use	0.38	0.43	7.58	Confirmed

Explained variance (Table 4) presents percentage of change of dependent variable caused by the independent variables. For instance, the external factors explained 22% (R2 = 0.22) of the variance of perceived usefulness. According to the results of data analysis as well as with respect to T-value, all hypotheses were significant at the level 0.01.

To measure goodness of fit of the model, relative $\chi 2$, goodness of fit index (GFI), normed fit index (IFT), comparative fitindex (CFI), incremental fit index (IFI), non-normed fit index (NNFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) were used.

Table 5. *Observed and acceptable values of the model fit indices*

Fit Index type	Observed value	Acceptable value	Fit level
Relative χ^2 fit index	1.04	< 3	Good Fit
GFI	0.94	≥ 0.9	Good Fit
IFI	0.99	≥ 0.9	Good Fit
CFI	0.98	≥ 0.9	Good Fit
NFI	0.91	≥ 0.9	Good Fit
NNFI	0.96	≥ 0.9	Good Fit
SRMR	0.04	≤ .05	Good Fit
RMSEA	0.01	≤ .05	Good Fit

Table 5 lists the acceptable values and fit levels of all the indices; clearly general goodness of fit of the model is supported (25, 27, 28).

Given the above results, TAM/acceptance of m-learning can be used in the case of undergraduate healthcare professional students.

DISCUSSION

In this study, students' acceptance of m-learning based on TAM model was examined. The findings confirmed the model as a foundation for this deployment and support the value of acceptance and its importance in m-learning in students. M-learning literature reviews showed that some authors have used TAM to examine acceptance of m-learning in students (29-32). These studies, however, have focused on different study populations.

Compared with the previous studies mentioned above, the present study uses all factors of TAM, thus providing deeper insight into the acceptance of m-learning so that some of the results were new and were not reported by earlier authors and some were consistent with the previous studies.

A key point missed by these studies is the external factors of the model and these researchers have not considered any item for evaluating external factors of TAM. Our results revealed a strong relationship between using m-learning and external factors. In addition, the results showed that mean score of external factors (especially teachers and even families' attitude) was less than the base mean score. In other words, the external factors did not have a supporting role with regard to acceptance of m-learning. In the present study, the lowest score obtained by external factors is the teachers' support of using mobile for learning purposes in academic environment (classroom and hospital). One probable reason for this finding is the teacher's different attitudes about the students' use of mobile devices in classroom or clinical setting. Some teachers might prohibit using such devices believing that it intervenes with normal class activities. Some authors have reported similar ideas (33-35).

Teacher's knowledge and attitude about technology might significantly improve the rate of technology penetration in educational environment (36). Providing a supportive and helpful environment for m-learning is a way to lure students toward using mobile technology for learning. Teachers are one of the elements in the education system with a key role in creating a positive psychological atmosphere in the classroom (37, 38). Given the teachers, family, and peers' influence in acceptance of m-learning, analyzing these factors is imperative in TAM, however, as noted, this factor has not been investigated by previous researchers.

The results showed that usefulness of m-learning was evaluated as good by the students. That is, this learning method has been accepted by the students as a good solution for learning. Moreover, the element "ease of learning" was evaluated as good, which indicates the proper structure of this method. There was a positive significant correlation between perceived ease of use and usefulness. This finding is consistent with Adedoja et al. (30), Joo et al. (31), and Khanh and Gim (32). Therefore, perceived ease of use of m-learning, in practice, can determine its usefulness. One may say therefore, that the easier the use of m-learning, the higher the perceived usefulness. The reason is that ease of use

ensures the user that they have better control on what they do.

Moreover, the participants had good attitudes about m-learning and this item was evaluated as good. Patilet al (39) and Xiao et al. (40) showed that the students had positive attitude about m-learning. An important point in virtual education is that the growth of e-learning is impossible without taking into account the users' attitudes. That is, we need to learn about users' attitudes about the technology. Through this, it is easier to predict and control the users' behavior (41).

Moreover, perceived usefulness and ease of use was positively and significantly correlated with students' attitudes. That is, these two factors are good predictors of the attitude. This finding is consistent with Adedoja et al. (30). It indicates that perceived usefulness and perceived ease of use of m-learning can show attitudes of users toward the use. That is, the advantages or values that students find in m-learning tells us how they feel about m-learning. This finding means that the more positive the mental perception of usefulness of m-learning (e.g. doing assignments faster, improvement of performance, higher quality), the more positive the attitude about m-learning. In this way, the users are mentally more ready to use the technologies in order to achieve their professional goals.

Similarly, the ease of use and less strict limitation perceived by students in using mobile learning can also affect their attitude toward m-learning. However, Khanh and Gim (32) reported that there was no significant positive correlation between perceived ease of use and attitude. According to our results, the path coefficient of perceived usefulness was higher than that of ease of use. That is, in comparison with perceived ease of use, perceived usefulness was a stronger predictor of students' attitude about m-learning.

There was a significant positive correlation between the attitude and behavioral intention in the students. Therefore, one may say, the more positive the attitude toward m-learning (interest and preference), the better the behavioral attitudes to use m-learning. In other words, students with more positive attitudes toward m-learning are more persistent in using m-learning and vice versa.

There was a positive significant correlation between intention to use and actual use of technology. This finding is consistent with Joo et al. (31) and Adedoja et al. (30). Thus, the stronger the intention to use m-learning, the more frequent and longer the use of m-learning. This indicates that behavioral intention to use m-learning is a determinant factor in acceptance of using m-learning. However, Kohn & Gim (32) did not survey actual use for learning and only focused on intention to use.

In general, the findings indicate that the TAM factors of external variables, perceived ease of use, perceived usefulness, intention to use, and attitude are all significant factors in acceptance of m-learning. Because the findings highlighted the role of teachers in acceptance of m-learning by the students, universities need to provide organizational supports like introducing faculty board members with the necessity and importance of m-learning, technical support, and professional development and prepare teachers to implement m-learning in university. Given the results and taking into account the external factors including teachers' support of m-learning, acceptability of m-learning by the students can be improved through designing and implementing user friendly applications and software based on the principles of usefulness and ease of use.

The finding of this study can be used as baseline information for researchers, educators, administrators and policymakers in the field of education. Educational managers need to update the learning-teaching process and create a supportive culture and atmosphere in schools. Medical/health education policy makers need to prepare the ground for a shift from traditional learning method to modern and advanced methods. Conducting more studies is recommended as follows. The factors pertinent to m-learning acceptance must be examined with different student populations. Moreover, other factors effective in the continuance of intention must be examined as several follow-up studies. Other models of technology acceptance can be used to examine m-learning. By comparing the results of such studies, the best model for future studies can be determined.

In terms of limitations of the study, the small scope of study, which was Saveh University of Medical Sciences in Iran, is a limitation to generalize the findings.

CONCLUSION

The results supported usefulness of TAM in the field of m-learning and its acceptance. The

findings confirmed the model as a foundation for this deployment and support the value of acceptance and its importance in m-learning in students. Accordingly, external variables, perceived usefulness, perceived ease of use, intention to use, and attitude were significant determining factors of acceptance of m-learning. By focusing on these factors in the programming to promote m-learning (including the supporting role of teachers of using m-learning for learning purposes), which has been neglected by previous studies, the acceptance of m-learning for students will be facilitated.

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Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. Dent J, Harden RM. A practical guide for medical teachers: Elsevier Health Sciences; 2013.

2. Koohestani HR, Soltani Arabshahi SK, Ahmadi F, Baghcheghi N. The Experiences of Healthcare Professional Students about the Educational Impacts of Mobile Learning. Qual Rep 2019;24(7):1593-609.

3. Al-Jundi W, Kayssi A, Papia G, Dueck A. Smart (phone) Learning Experience Among Vascular Trainees Using A Response System Application. J Surg Educ 2017;74(4):638-43. https://doi.org/10.1016/j.jsurg.2016.12.006

4. Barzegar R. From Electronic Learning To Mobile Learning: Theoretical Principles MEDIA. 2012;3(2):35-41.

5. Iqbal S, Qureshi IA. M-learning adoption: A perspective from a developing country. IRRODL. 2012;13(3):147-64. https://doi.org/10.19173/irrodl.v13i3.1152

6. Koohestani HR, Baghcheghi N, Karimy M, et al. Lived experience of nursing students about ethical concerns of using mobile learning in educational and clinical contexts. J Med Ethics Hist Med 2019;12(5). https://doi.org/10.18502/jmehm.v12i5.858

7. Lee L-A, Wang S-L, Chao Y-P, et al. Mobile Technology in E-Learning for Undergraduate Medical Education on Emergent Otorhinolaryngology-Head and Neck Surgery Disorders: Pilot Randomized Controlled Trial. JMIR Med Educ 2018;4(1). https://doi.org/10.2196/mededu.9237

8. Koohestani HR, Soltani Arabshahi SK, Fata L, Ahmadi F. The educational effects of mobile learning on students of medical sciences: A systematic review in experimental studies. J Adv Med Educ Prof 2018;6(2):58-69.

9. Liu RF, Wang FY, Yen H, et al. A new mobile learning module using smartphone wallpapers in identification of medical fungi for medical students and residents. Int J Dermatol 2018;57(4):458-62. https://doi.org/10.1111/ijd.13934

10. Golenhofen N, Heindl F, Grab-Kroll C, et al. The use of a mobile learning tool by medical students in undergraduate anatomy and its effects on assessment outcomes. Anat Sci Educ 2020 ;13(1):8-18 https://doi.org/10.1002/ase.1878

11. van Schaik S, Plant J, O'Sullivan P. Promoting self-directed learning through portfolios in undergraduate medical education: the mentors' perspective. Med Teach 2013;35(2):139-44. https://doi.org/10.3109/0142159X.2012.733832

12. Gaglani MSM, Topol EJ. iMedEd: the role of mobile health technologies in medical education. J Assoc Am Med Coll 2014;89(9):1207. https://doi.org/10.1097/ACM.0000000000000361

13. Masika MM, Omondi GB, Natembeya DS, et al. Use of mobile learning technology among final year medical students in Kenya. Pan Afr Med J 2015;21(1). https://doi.org/10.11604/pamj.2015.21.127.6185

14. Johansson PE, Petersson GI, Nilsson GC. Nursing students' experience of using a personal digital assistant (PDA) in clinical practice-an intervention study. Nurse Educ Today 2013;33(10):1246-51. https://doi.org/10.1016/j.nedt.2012.08.019

15. Johansson P, Petersson G, Saveman B-I, Nilsson G. Experience of mobile devices in nursing practice. Nord J Nurs Res 2012;32(4):50-4. https://doi.org/10.1177/010740831203200411

16. Mather C, Cummings E. Nurses' use of mobile devices to access information in health care environments in Australia: a survey of undergraduate students. JMIR Mhealth Uhealth 2014;2(4):e56. https://doi.org/10.2196/mhealth.3467

17. Sheikhtaheri A, Hashemi N, Hashemi NA. Benefits of Using Mobile Technologies in Education from the Viewpoints of Medical and Nursing Students. Stud Health Technol Inform 2018;251:289-92.

18. Yazdannik A, Dsatjerdi EI, Mohamadirizi S. Utilizing mobile health method to emergency nurses' knowledge about Emergency Severity Index triage. J Educ Health Promot 2018;7:10. https://doi.org/10.4103/jehp.jehp_29_17

19. Marco LD, Venot A. Does the acceptance of hybrid learning affect learning approaches in FranceJ Educ Eval Health Prof 2017;14:24. https://doi.org/10.3352/jeehp.2017.14.24

20. Curran V, Fleet L, Simmons K, et al. Adoption and Use of Mobile Learning in Continuing Professional Development by Health and Human Services Professionals. J Contin Educ Health Prof 2019. https://doi.org/10.1097/CEH.0000000000000243

21. Di Marco L, Venot A, Gillois P. Does the acceptance of hybrid learning affect learning approaches in France J Educ Eval Health Prof 2017;14. https://doi.org/10.3352/jeehp.2017.14.24

22. Al-Adwan A, Al-Adwan A, Smedley J. Exploring students acceptance of e-learning using Technology Acceptance Model in Jordanian universities. Int J Educ Dev Using Inf Commun Technol 2013;9(2):4.

23. Rahimi B, Nadri H, Lotfnezhad Afshar H, Timpka T. A systematic review of the technology acceptance model in health informatics. Appl Clin Inform 2018;9(3):604-34. https://doi.org/10.1055/s-0038-1668091

24. Davis FD, Bagozzi RP, Warshaw PR. User acceptance of computer technology: a comparison of two theoretical models. Manag Sci 1989;35(8):982-1003. https://doi.org/10.1287/mnsc.35.8.982

25. Kline RB. Principles and practice of structural equation modeling. New York City: Guilford publications; 2015.

26. Mehdipour Y, Khammarnia M, Karimi A, et al. Effective Factors in Acceptance of Mobile Health from Physicians Point of View. J Mod Med Info Sci 2017;3(1):32-9.

27. Ashktorab T, Baghcheghi N, Seyedfatemi N, Baghestani A. Psychometric parameters of the Persian version of the BriefCOPE among wives of patients under hemodialysis. Med J Islam Repub Iran 2017;31:20. https://doi.org/10.18869/mjiri.31.20

28. Byrne BM. Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming: Psychology Press 2013. https://doi.org/10.4324/9780203774762

29. Briz-Ponce L, Pereira A, Carvalho L et al. Learning with mobile technologies-Students' behavior. Comput Human Behav 2017;72:612-20. https://doi.org/10.1016/j.chb.2016.05.027

30. Adedoja G, Adelore O, Egbokhare F, Oluleye A. Learners' acceptance of the use of mobile phones to deliver tutorials in a distance learning context: A case study at the University of Ibadan. AJIS 2013;5(3):3.

31. Joo YJ, Kim N, Kim NH. Factors predicting online university students' use of a mobile learning management system (m-LMS). Educ Technol Res Dev 2016;64(4):611-30. https://doi.org/10.1007/s11423-016-9436-7

32. Khanh NTV, Gim G. Factors influencing mobile-learning adoption intention: An empirical investigation in high education. J Socialocial Sci 2014;10(2):51-62. https://doi.org/10.3844/jssp.2014.51.62

33. Beland L-P, Murphy R. Ill communication: technology, distraction & student performance. Labour Economics 2016;41:61-76. https://doi.org/10.1016/j.labeco.2016.04.004

34. Dahlstrom E, Walker J, Dziuban C. ECAR study of undergraduate students and information technology. Louisville: CO: ECAR, 2013.

35. McCoy BR. Digital distractions in the classroom phase II: Student classroom use of digital devices for non-class related purposes. JoME 2016;7(1):5-32.

36. Koohestani HR, Arabshahi SKS, Ahmadi F. The Paradox of Acceptance and Rejection: the Perception of Healthcare Professional Students about Mobile Learning Acceptance in Iran University of Medical Sciences. QRE 2018;7(2):144-69. https://doi.org/10.17583/qre.2018.3341

37. Koohestani HR, Baghcheghi N. The effects of team-based learning techniques on nursing students' perception of the psycho-social climate of the classroom. Med J Islam Repub Iran 2016;30:437.

38. Nejat N, Kouhestani H, Rezaei K. Effect of Concept Mapping on Approach to Learning among Nursing Students. Hayat 2011;17(2).

39. Patil RN, Almale BD, Patil M, et al. Attitudes and Perceptions of Medical Undergraduates Towards Mobile Learning (M-learning). J Clin Diagn Res 2016;10(10):Jc06-jc10. https://doi.org/10.7860/JCDR/2016/20214.8682

40. Xiao Q, Zhang Q, Wang L, et al. Mobile Learning in Nursing Undergraduates in China: Current Status, Attitudes and Barriers. Stud Health Technol Inform 2017;245:1314.

41. Sohrabi Z, Koohestani HR, Baghcheghi N, et al. The effects of group blogging on the attitude towards virtual education in nursing students. Med J Islam Repub Iran 2017;31:132. https://doi.org/10.14196/mjiri.31.132

Faktori koji utiču na učenje putem mobilnog telefona kod studenata zdravstvene nege na osnovu modela prihvatanja tehnologije

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SAŽETAK

Učenje preko mobilnog telefona jedno je od ključnih ostvarenja u edukiciji 21. veka. Međutim, pored njegovih mogućnosti i funkcija, prihvatanje mobilnog telefona od strane studenata veoma je važan faktor za uspešno učenje. Ova studija bila je pokušaj određivanja efektivnih faktora u prihvatanju učenja putem mobilnog telefona i određivanja tipa odnosa između ovih faktora, kod studenata postdiplomskih studija zdravstvene nege, na osnovu modela prihvatanja tehnologije. Ova pregledna studija izvedena je kao deskriptivno-analitička studija. Ukupno 310 studenata Univerziteta medicinskih nauka u Savehu u Iranu, učestvovalo je u studiji koja je urađena 2018. godine. Za prikupljanje podataka korišćen je upitnik baziran na modelu prihvatanja tehnologije, čije su validnost i pouzdanost prethodno utvrđene. Analiza podataka urađena je kroz modeliranje strukturalne jednačine i konfirmatornu analizu putanje. Srednje vrednosti skora za sve varijable (opažena korisnost, lakoća korišćenja, stav prema korišćenju, namera korišćenja telefona i realno korišćenje), osim spoljašnjih faktora, bile su više od osnovnih prosečnih vrednosti (m ≥ 3), što ukazuje na dobro prihvatanje učenja putem mobilnog telefona od strane studenata. Najniže srednje vrednosti skora dobijene su za podršku učenja putem mobilnog telefona od strane profesora (spoljašnji faktor). Uočena je značajna korelacija među spoljašnjim faktorima, opaženoj korisnosti, stavu prema korišćenju i nameri korišćenja i realnoj primeni učenja putem mobilnog telefona (p < 0,05). Rezultati su podržali efektivnost konstrukta modela prihvatanja tehnologije i mogućnost predviđanja prihvatanja učenja putem mobilnog telefona. Faktori modela prihvatanja tehnologije bili su značajne determinante u prihvatanju učenja putem mobilnog telefona.

Ključne reči: **učenje putem mobilnog telefona, usvajanje, student postdiplomskih studija zdravstvene nege, model prihvatanja tehnologije**