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Digital Learning Dynamics: The KesPro-P App and Its Effect on The Behavioral Intention of Nursing Students

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ABSTRACT

Background: understanding behavioral intention is crucial for effective learning media design and promoting technology use in education and nursing. The KesPro-P app, developed for reproductive health nursing practicals, is introduced, with a focus on evaluating nursing students' behavioral intention, influenced by perceived usefulness and ease of use
Purpose: the purpose of the study was to find out how 50 fifth semester nursing students who participated in the Reproductive Health Nursing practicum's behavioral intention was affected by utilizing the KesPro-P application.
Methods: this cross-sectional study was carried out from September to October 2023 at Faculty of Nursing, Universitas Andalas Indonesia. Students that participated in the research completed questionnaires for research variables and used the KesPro-P program. The Spearman Rank Test was used to process the data using SPSS.
Results: perceived usefulness, perceived ease of use, and behavioral intention were found to be valuable among students who had a high propensity to use the KesPro-P application. Perceived usefulness, perceived ease of use, and behavioral intention are significantly correlated ($p = 0.000$).
Conclusion: students believe this App is helpful when used in lectures and is effective, efficient, and simple to use anywhere, at any time, as evidenced by the high perceived usefulness and perceived ease of use ratings. In order to have all of the student practicum competences for this course incorporated in a single application, this application has to be developed further for more practicum topics.

Keywords:
Educational technology; nursing students; smartphone application; behavioral intention

BACKGROUND

Behavioral intention is important in using technology in learning media because it is a key determinant of technology use (Aldenny et al., 2019). It is often acknowledged that a person's deliberate intention to use a technology greatly influences how that device is actually used (Latief et al., 2022). Recent data, however, indicates that behavioral intention may not have much of an impact on use or may not necessarily result in real use. As a result, other concepts are now being taken into account. One such concept is behavioral expectation, which is a person's subjective likelihood of using technology (Huda et al., 2022). According to the situative perspective on technological acceptance, contextual elements impact behavioral intention, which makes it impossible to categorize into internal and external components (Harnadi et al., 2022). Therefore, understanding behavioral intention is crucial in order to design effective learning media and promote technology use in education.

Behavioral intention is important in using technology in nursing education because it predicts the likelihood of individuals actually using the technology (Lai et al., 2022). It reflects the individual's attitude and motivation towards using the technology, as well as their perceived usefulness and ease of use (Huda et al., 2022). Understanding nursing students' behavioral intention can help hospitals and clinical training institutions in integrating nursing information systems into clinical nursing education (Latief et al., 2022). Additionally, behavioral intention can be influenced by factors such as performance expectation, social influence, effort expectancy, facilitating conditions, hedonic motivation, price value, and habit (Mirzaei-Alavijeh et al., 2017). Nurse educators can learn more about how education, culture, and religion may affect nursing students' views toward information technology by examining behavioral intention. Ultimately, considering behavioral intention can contribute to the successful adoption and integration of technology in nursing education.

Smartphone applications have shown potential in nursing education. One interesting theory is the use of standardized nursing language (SNL) applications, which can improve the quality of nursing care by providing scientifically developed SNLs in different languages (Shin & Jung, 2023). Another theory is the use of smartphone applications as pedagogical tools for teaching vital signs. The Clinic Vitals app has been found to be an equivalent alternative to traditional in-person instruction, providing anytime access to instructional videos and articles (Hester et al., 2021). Additionally, the combination of smartphone applications with hands-on practice has been shown to be effective in teaching breast self-examination, resulting in higher knowledge, attitude, skills, and satisfaction among students (Kang et al., 2020). Furthermore, the use of ChatGPT in nursing education offers personalized learning, immediate feedback, and simulation scenarios, but challenges such as accuracy, privacy issues, and bias need to be addressed. Lastly, smartphone-based education programs have been found to improve the clinical skills of nursing students when dealing with traumatic patients (Ghezeljeh et al., 2021).

The maternity nursing team created the smartphone app KesPro-P, which is utilized in the Reproductive Health Nursing practicum at Faculty of Nursing, Universitas Andalas. Anyone can download and use this application from the Play Store. Students will have

the opportunity to test KesPro-P in this study, and their behavioral intentions will be evaluated. Students' perceptions of perceived usefulness and perceived simplicity of use - two criteria that impact behavioral intention—will also be examined.

Perceived usefulness and perceived ease of use have a direct impact on behavioral intention in using smartphone applications for learning. When users perceive a smartphone application as useful and easy to use, they are more likely to have the intention to use it for learning purposes. The perceived usefulness refers to the extent to which users believe that the application will enhance their learning experience, while the perceived ease of use refers to the degree to which users believe that the application is easy to navigate and operate. These factors play a crucial role in shaping users' behavioral intention to use smartphone applications for learning (Sinurat & Sugiyanto, 2022).

OBJECTIVE

The purpose of the study was to find out how 50 fifth semester nursing students who participated in the Reproductive Health Nursing practicum's behavioral intention was affected by utilizing the KesPro-P application.

METHODS

This cross-sectional study was carried out at Faculty of Nursing, Universitas Andalas, Indonesia from September to October of 2023. Students enrolled in the Reproductive Health Nursing practicum in their fifth semester participated in this study. One class of fifty students from the class of 2021 makes up the research sample.

Students will participate in the KesPro practicum through traditional means, with case studies completed manually or through ilearn, and practicum modules serving as a guide. Students will next use the KesPro-P application on the same topic, evaluating its perceived usefulness and perceived ease of use along with their behavioral intention to use it for learning. A structured questionnaire with questions about behavioral intention, perceived usefulness, perceived ease of use, and demographic data was one of the research instruments. Making use of a four-item Likert scale.

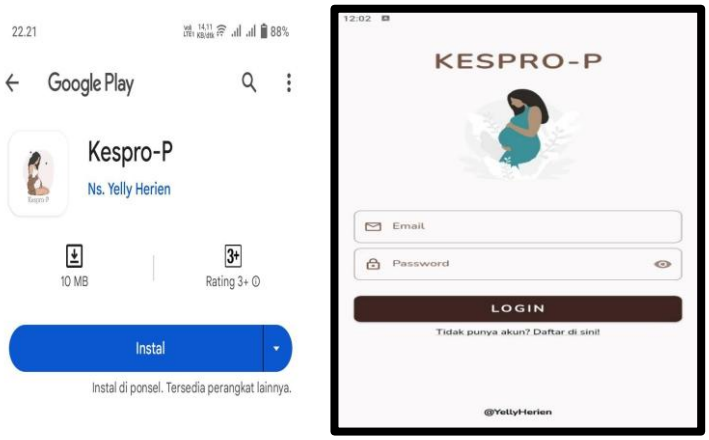

Figure 1. *A sample figure in Google Play*

SPSS was used to examine the data. Descriptive statistics and the Spearman rank test were used in the statistical analyses to ascertain the correlation coefficient, connection, and mean score for each variable. Every statistical test is two-sided, and significance is defined as a p-value of less than 0.05.

The research was approved by the Faculty of Medicine's Research Ethics Commission, Universitas Andalas. The fact that participation was entirely voluntary and free of coercion was disclosed to the participants. Additionally, it was made clear to them that they could choose not to participate in the study.

RESULTS

The KesPro-P application was downloaded by all students from the Playstore, and it was utilized for three practical topics: maternal emergency screening, Kartu Skor Poedji Rohjati (KSPR), and pregnancy assessment. The study employed univariate analysis to determine each variable's mean. Perceived usefulness and perceived ease of use are the independent study variables, whereas behavioral intention is the dependent factors. The following is a presentation of the univariate analysis results.

Table 1. The average score for perceived usefulness, ease of use, behavioral intention toward using the KesPro-P aplication (n= 50)

Variable	Mean	Min-Max
Perceived Usefulness	17,52	15-20
Perceived Ease of Use	16,88	13-20
Behavioral Intention	16,6	12-20

Table 1 above indicates that the average score for perceived usefulness regarding the use of the KesPro-P application is 17.52, which means that students' perceptions of the usefulness of KesPro-P tend to be high, the highest score is 20 and the lowest score is 15. It is known that the mean score for Perceived Ease of Use regarding the use of the KesPro-P application is 16.88, which means that students' perceptions of the ease of use of KesPro-P tend to be high, the highest score is 20 and the lowest score is 13. It is known that the average score on Behavioral Intention towards using the KesPro-P application is 16.6, which means that the behavioral intention to continue using KesPro-P tends to be high, the highest value is 20 and the lowest value is 12. According to the findings of the Kolmogorov-Smironov test data normalcy test, the significance values for each variable were greater than 0.05, suggesting that the data did not follow a normal distribution. The Spearman correlation test, therefore is the bivariate analysis employed in this study.

Table 2. The correlation of perceieved usefullness, ease of use and behavioral intention of ysing the KesPro-P

Variable	*Behavioral Intention*	
	Correlation coefficient	P (value)
Perceived Usefulness	0,881	0,000
Perceived ease of use	0,944	0,000

Based on table 2, it can be seen that the results of the Spearman correlation test obtained a value of p = 0.000 (p < 0.05), indicating that there is a substantial connection between perceived usefulness and behavioral intention. The research results show a value of r = 0.881, which means that the correlation between the perceived usefulness variable and behavioral intention is very strong, with a positive (unidirectional) correlation, that is, the higher the perceived usefulness score, the higher the behavioral intention score. It can be seen that the results of the Spearman correlation test obtained a value of p = 0.000 (p < 0.05), indicating that there is a substantial correlation between perceived ease of use and behavioral intention. The results of the research show a value of r= 0.944, which means that the correlation between the variable perceived ease of use and behavioral intention is very strong, with a positive (unidirectional) correlation, that is, the higher the perceived ease of use score, the higher the behavioral intention score.

DISCUSSION

Perceived usefulness and perceived ease of use can significantly affect the behavioral intention of nursing students in using technology. The perception of usefulness refers to the belief that using technology will enhance their performance and make their tasks easier to accomplish. When nursing students perceive technology as useful, they are more likely to have a positive intention to use it. Similarly, the perception of ease of use refers to the belief that technology is easy to learn and operate (Widiar et al., 2023). When nursing students perceive technology as easy to use, their aim to use it is more likely to be constructive. (Ho et al., 2020). These perceptions of usefulness and ease of use can influence the behavioral intention of nursing students, leading to their actual use of technology in their practice.

An investigation into the future behavioral intentions of nurses—particularly Chinese nurses—in relation to the use of mobile-based care applications is the goal of a study on nurses in China. The acceptability of mobile-based care applications by Chinese nurses is investigated in this study using an expansion of the Unified Theory of acceptability and Use of Technology. Performance expectancy has a beneficial impact on nurses' behavioral intents to use mobile-based care applications, according to the study's findings. Nurses are likely to be more ready to utilize a mobile-based care app if it can enhance their understanding of patient care and is practical for patient monitoring and data exchange (Pan & Gao, 2021).

Perceived usefulness and perceived ease of use of KesPro-P are important factors in

this research and are generally high. Nursing students' perceived usefulness and perceived ease of use scores are high when using smartphone applications in learning because these applications offer interactive features, abundant learning materials, and ease of use. Additionally, mobile device and nursing information system integration provides convenience and usefulness in clinical practice, which positively influences students' attitudes and intentions to use these applications (Lai et al., 2022). Nursing students also find mobile learning to be advantageous due to its convenience, ease of use, and usefulness in acquiring nursing knowledge resources and exam preparation (Chen et al., 2021). Furthermore, game-based mobile applications designed for nursing education have been found to improve students' learning achievement and provide efficient and interactive educational content, which motivates students and enhances their learning experience (Suh et al., 2022). Overall, the positive attitudes and high scores in perceived usefulness and perceived ease of use can be attributed to the interactive nature, convenience, and usefulness of smartphone applications in nursing education.

Smartphone application content that can increase students' perceived usefulness and perceived ease of use includes features that enhance the learning experience and provide supplemental content. Additionally, developing the User Interface and User Experience of the application can increase the perceived ease of use (Sembiring, 2022). The content should be designed to help students confirm answers to class exercises and access additional resources. Furthermore, incorporating features that make the application efficient and effective for transactions can also contribute to its perceived usefulness (Madlala et al., 2020). Overall, the content should be tailored to meet the specific needs and preferences of the students, making it relevant and valuable for their learning and daily activities.

An essential component of using behavioral intention is technology in learning for nursing students (Chao, 2019). It has been found that attitude, performance expectancy, mobile self-efficacy, and motivation are significant determinants of behavioral intention(Lai et al., 2022). Additionally, perceived ease of use and perceived usefulness of technology, as well as attitude towards using it, have a positive influence on behavioral intention (Songkram et al., 2023). Factors such as technology self-efficacy, subjective norms, and facilitating conditions also contribute to the recognition and acceptance of technology in learning. The COVID-19 pandemic has further emphasized the importance of embracing technology for safe nursing practice, making it essential for nursing students to be ready and willing to use ICT and social media for learning. Overall, behavioral intention plays a crucial role in the adoption and use of technology in learning for nursing students, and understanding the factors influencing it can help improve the feasibility and effectiveness of technology integration in nursing education (Bahri et al., 2021).

CONCLUSION

This study demonstrates a substantial correlation between nursing students' behavioral intention to use the KesPro-P application during their Reproductive Health Nursing practicum and their perceptions of its utility and simplicity of use. The high ratings for

perceived usefulness and perceived simplicity of use indicate that students find this program to be beneficial, efficient, and simple to use when utilized in lectures. To ensure that all of the student practicum competencies for this course are included in a single application, this application's development must be extended to cover additional practicum themes.

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REFERENCES

Aldenny, M., Weniko, Y. P., Sfenrianto, & Wang, G. (2019). Behaviour Intention of Information Technology Students Using Youtube as Learning Resources. *4th International Conference on Information Technology, Information Systems and Electrical Engineering (ICITISEE)*. 4th International Conference on Information Technology, Information Systems and Electrical Engineering (ICITISEE).

Bahri, H., Mlili, N. E., Akande, O. N., Kerkeb, A., & Madrane, M. (2021). Dataset of Moroccan nursing students' intention to use and accept information and communication technologies and social media platforms for learning. *Data in Brief*, *37*, 107230. https://doi.org/10.1016/j.dib.2021.107230

Chao, C.-M. (2019). Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model. *Frontiers in Psychology*, *10*, 1652. https://doi.org/10.3389/fpsyg.2019.01652

Chen, B., Yang, T., Wang, Y., Xiao, L., Xu, C., Shen, Y., Qin, Q., Wang, Y., Li, C., Chen, F., Leng, Y., Pu, Y., & Sun, Z. (2021). Nursing students' attitudes toward mobile learning: An integrative review. *International Journal of Nursing Sciences*, *8*(4), 477–485. https://doi.org/10.1016/j.ijnss.2021.08.004

Ghezeljeh, T. N., Balajelini, F. T., & Haghani, H. (2021). *Effect of Smartphone-based Education on Students' Skills in Managing Traumatized Patients: Pre-Test and Post-Test Design with a Control Group*.

Harnadi, B., Prasetya, F. H., & Widiantoro, A. D. (2022). *Understanding Behavioral Intention to Use Social Media Technology: Two Comparing Model, TAM and UTAUT*. 6th International Conference on Information Technology (InCIT), Nonthaburi, Thailand.

Hester, L., Reed, B., Bohannan, W., Box, M., Wells, M., & O'Neal, B. (2021). Using an educational mobile application to teach students to take vital signs. *Nurse Education Today*, *107*, 105154. https://doi.org/10.1016/j.nedt.2021.105154

Ho, K.-F., Chang, P.-C., Kurniasari, M. D., & Susanty, S. (2020). Determining Factors Affecting Nurses' Acceptance of a Care Plan System Using a Modified Technology Acceptance Model 3: Structural Equation Model With Cross-Sectional Data. *JMIR Med Inform.*, *5*(8). https://doi.org/10.2196/15686

Huda, M. Q., Hasanati, N., Tyas, R. A., Durachman, Y., & Nurmiati, E. (2022). Behavioral Intention Analysis of Distance Education System Using the Innovation Diffusion Theory and Technology Acceptance Model. *2022 10th International Conference on Cyber and IT Service Management (CITSM)*, 1–6. https://doi.org/10.1109/CITSM56380.2022.9935839

Kang, S. R., Shin, H., Lee, J., & Kim, S. (2020). Effects of smartphone application education combined with hands-on practice in breast self-examination on junior nursing students in South Korea. *Japan Journal of Nursing Science*, *17*(3), e12318. https://doi.org/10.1111/jjns.12318

Lai, C.-L., Lee, T.-Y., Lin, S.-C., & Lin, I.-H. (2022). Applying the Technology Acceptance Model to Explore Nursing Students' Behavioral Intention to Use Nursing Information Smartphones in a Clinical Setting. *Comput Inform Nurs*, *40*(7), 506–512.

Latief, S., Suprapto, N., Simorangkir, L., Hendrayani, S., & Rahmah. (2022). Using the Kinetic Magic Cursor in Education to Predict the Behavioral Intention in Using Technology. *TEM Journal*.

Madlala, M., Civilcharran, S., & Singh. (2020). *Understanding students' usage of smartphone applications for learning purposes: A case study*. 2020 International Conference on Advances in Computing and Communication Engineering (ICACCE).

Mirzaei-Alavijeh, M., Department of Public Health, School of Health, Kermanshah University of Medical Sciences, Kermanshah. Iran, Karami-Matin, B., Department of Public Health, School of Health, Kermanshah University of Medical Sciences, Kermanshah. Iran, Hosseini, S. N., Ministry of Health and Medical Sciences, Tehran, Iran., Jalilian, F., & Department of Public Health, School of Health, Kermanshah University of Medical Sciences, Kermanshah. Iran. (2017). Social Cognitive Determinants of Patient Education Intention among Nurses. *Journal of Education and Community Health*, *4*(1), 12–19. https://doi.org/10.21859/jech.4.1.12

Pan, M., & Gao, W. (2021). Determinants of the behavioral intention to use a mobile nursing application by nurses in China. *BMC Health Services Research*, *21*(1), 228. https://doi.org/10.1186/s12913-021-06244-3

Sembiring, T. J. (2022). The Influence of Perceived Usefulness and Perceived Ease of Use on Preference of Undergraduate ITB Students on Choosing Mutual Fund Investment Platform. *International Journal of Advanced Research in Economics and Finance*. https://doi.org/10.55057/ijaref.2022.4.3.11

Shin, J. H., & Jung, S. O. (2023). Heuristic smartphone usability evaluations of the mobile application NANDA, nursing interventions classification, and nursing outcomes classification customized for nursing home registered nurses. *International Journal of Nursing Knowledge*, *34*(4), 307–315. https://doi.org/10.1111/2047-3095.12403

Sinurat, E. M., & Sugiyanto, B. L. (2022). Pengaruh Perceived Usefulness, Perceived Ease of Use dan Promosi Penjualan melalui Mediasi Attitude Toward Using dan Perceived Security terhadap Behavioral Intention to Use (Studi Empiris: Pengguna Mobile Wallet di Jakarta). *Business & Management Journal*.

Songkram, N., Chootongchai, S., Osuwan, H., Chuppunnarat, Y., & Songkram, N. (2023). Students' adoption towards behavioral intention of digital learning

platform. *Education and Information Technologies*, *28*(9), 11655–11677. https://doi.org/10.1007/s10639-023-11637-4

Suh, D., Kim, H. G., & Kim, H. (2022). Effect of Game-Based Clinical Nursing Skills Mobile Application on Nursing Students. *Cin-Computers Informatics Nursing*.

Widiar, G., Yuniarinto, A., & Yulianti, I. (2023). Perceived Ease of Use's Effects on Behavioral Intention Mediated by Perceived Usefulness and Trust. *Interdisciplinary Social Studies*, *2*(4), 1829–1844. https://doi.org/10.55324/iss.v2i4.397