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## DIGITAL LITERACY SKILLS AS BASIC COMPETENCIES FOR STUDENTS IN HIGHER EDUCATION: THE EXPLORATION STUDY OF CYBER PSYCHOLOGY

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**Abstract:** *Cyberpsychology focuses on the impact of digital technology and the internet on behavior and interaction between individuals as creatures socially. This research explore data mapping related to the mental condition of health students in midwifery, nursing and nutrition study programs at three different higher education so as to find balanced data mapping related to students' psychological conditions regarding current advances in digital and internet technology which have an impact on aspects of addiction, existence, self-confidence, privacy, anxiety and social interactions between individuals. This research used developmental and qualitative methods. The questionnaire items were validated by experts and tested using the Dick & Carey, 2015 development model and the distribution of the questionnaire was carried out online with a total of 384 student respondents. Research showed that the health aspect of internet addiction students was 74.5%, impact on social was 61.8%, digital well-being was 80.8%, social comparison was 70, 7%, digital mental health at 68.1%, and fear of missing out at 76.2%, based on these aspects it was in the high category, while the aspect of worry about being a victim of cyberbullying was 48.6% in the low category. Health students were not yet fully equipped with soft skills in mastering technology, especially digital literacy, so they cannot detect early the negative impact of digital on their mental health as potential health workers professional.*

**Keywords:** *Cyber, psychology, students, mental health, digital literacy.*

**Abstrak:** Siberpsikologi berfokus pada dampak teknologi digital dan internet terhadap perilaku dan interaksi antar individu sebagai makhluk sosial. Penelitian ini mengeksplorasi pemetaan data terkait kondisi mental mahasiswa kesehatan di program studi kebidanan, keperawatan, dan gizi di tiga perguruan tinggi yang berbeda untuk menemukan pemetaan data yang seimbang terkait kondisi psikologis mahasiswa terkait kemajuan teknologi digital dan internet terkini yang berdampak pada aspek kecanduan, eksistensi, kepercayaan diri, privasi, kecemasan, dan interaksi sosial antar individu. Penelitian ini menggunakan metode pengembangan dan kualitatif. Item kuesioner divalidasi oleh para ahli dan diuji menggunakan model pengembangan Dick & Carey, 2015, dan penyebaran kuesioner dilakukan secara daring dengan total 384 responden mahasiswa. Penelitian menunjukkan bahwa aspek kesehatan mahasiswa adiksi internet sebesar 74,5%, dampak pada sosial sebesar 61,8%, kesejahteraan digital sebesar 80,8%, perbandingan sosial sebesar 70,7%, kesehatan mental digital sebesar 68,1%, dan rasa takut ketinggalan sebesar 76,2%, berdasarkan aspek-aspek tersebut berada pada kategori tinggi, sedangkan aspek kekhawatiran menjadi korban cyberbullying sebesar 48,6% berada pada kategori rendah. Mahasiswa kesehatan belum sepenuhnya dibekali soft skills dalam penguasaan teknologi, terutama literasi digital, sehingga mereka belum dapat mendeteksi dini dampak negatif digital terhadap kesehatan mental mereka sebagai calon tenaga kesehatan profesional.

**Kata kunci:** Cyber, psikologi, mahasiswa, kesehatan mental, literasi digital.

## INTRODUCTION

Various aspects of life, especially in the field of education, have been significantly influenced by the rapid growth of digital technology. Digital devices and platforms have become increasingly popular among health students, negatively impacting their mental health and the way they access information. Cyberpsychology is a field of science that studies how the digital environment affects individual psychology, so this raises important questions about how technology affects students' cognition, behaviour and emotional health. Recent studies have shown that there are positive and negative impacts of engaging students' digital skills in the current era. Some studies show that digital technology engagement can improve student learning outcomes and creativity, while others warn about dangers such as internet addiction, cyberbullying, and anxiety, (Vázquez-Martínez et al. 2024).

There are very few texts related to cyberpsychology that focus on the impact of mental health on students studying in the Health Department, especially Diplomas. Diploma curricula often include many courses that must be completed in a limited time (Buthelezi and Shopo 2023), because it focuses on the application of practical knowledge and skills in the world of work, so students are required to continue to maintain consistency in their studies, manage their time well, and fulfil all academic requirements within a short predetermined time period, as a result they are very vulnerable to negative impacts such as increasing levels of excessive stress, fatigue and low knowledge of their digital literacy abilities in the current digital era. However, the fact is that in today's digital era, students must be able to balance life and behave online or offline without any special academic provision, but rather individually searching for the sources of information needed online without

knowing the impact system online, this is due to the low ability to filter the information found.

In the current generation Z era, the mental health of health students is a new challenge that has never been focused on thoroughly before, so this is a concern that must be resolved immediately. With the various digital facilities available today, there are many digital platforms, social media, artificial intelligence and online learning environments, so that continuous connectivity can trigger levels of anxiety, restlessness, depression, insomnia and anti-social face-to-face encounters. This statement means that The mental health needs of students in the digital era must be addressed through institutional support systems. Universities should provide specialized counselling services that focus on digital issues such as cyberbullying, online harassment and digital addiction, (Yadav, n.d.; Albi Kawi 2023).

Researchers investigated the relationship between digital device use and students' sleep disorders (Lemola et al. 2015; Pham et al. 2021; Salfi et al. 2021; Joshi 2022). Cyberbullying is an act of using authority or power that is considered unfair and is an example of oppression (Sihab-Us-Sakib et al. 2024; Tabares, Restrepo, and Zapata-Lesmes 2024; A. Y. Lubis, Mikarsa, and Andriani 2022; Winstone, Jamal, and Mars 2024a; 2024b). Along with cybercrimes, there are various types of cyber victims, such as online consumer fraud, data theft identity personal, cyber bullying and crime phishing and also malware (Tuah et al. 2018; Reep-van den Bergh and Junger 2018; Al-Khater et al. 2020), 23 Apart from that, other researchers explored the picture of identity theft and controlled online and offline routines for victims of identity theft, one of which was the age factor (Holtfreter et al. 2015; Holt and Turner 2012; Y. Li et al. 2019).

However, current research papers do not fully focus on mapping related implications on cyber psychology health students brought about by the

transformation of the digital era in life current students. If not researched more deeply, the mapping problem is in the activity cyber psychology student health. This can lead to the risk of disrupting academic performance, making student activities difficult to control and addiction to technology, which results in a potential reduction in the quality of performance professional as candidates for superior health workers and hinder the creation of early detection or prevention programs as well intervention which is right on target. Therefore, there is a need that demands researchers to explore activity mapping cyber psychology faced by health students, so that this description can be used to carry out appropriate interventions and policy making in overcoming the problems facing the world of education today.

Previous research results related to cyberpsychology have found several solutions to student mental health problems caused by digital technology. One effective approach is research on digital literacy that teaches students how to use technology in a safe way. The aim of this research is to map students' level of awareness about the risks associated with excessive or inappropriate digital engagement and the management of their online behaviour. This is in line with (Reddy, Chaudhary, and Hussein 2023; Lee and Hancock 2023), students who took digital literacy workshops experienced lower levels of stress and were better able to balance online activities with home responsibilities. Incorporating mindfulness-based interventions has also shown promising results in reducing anxiety and increasing student resilience.

## **METHODS**

### **Research Design**

This research uses mix research. Where researchers combine development research methods using the Dick & Carey, 2015 model to develop items, instrument

questionnaires and descriptive study to assess the psychological impact of digital technology on health students. The sample was recruited from several universities that have majors in the field of Health, related to the Diploma 3 (D3) Midwifery, Nursing and Nutrition program with an age range of 18 to 23 years, and male and female. Data was collected using a structured online questionnaire, through a questionnaire to measure the impact of health students' cyberpsychology in their activities exploring the digital world. Technique recruitment sample using simple random sampling, so that each study program has an equal opportunity to be selected into a sample on research. The sample size in the three study programs was 124 people each, so the total sample involved was 372 people. Research Procedures of Faculty of Health students in the departments of Midwifery, Nursing and Nutrition, each of whom has different characteristics in aspects of the curriculum, special skills, required competencies and their responsibilities in the workplace. There are three universities involved, namely, Bengkulu State University, Dehasen University Bengkulu and Bengkulu Ministry of Health Polytechnic.

Cyber psychology in the aspect of digital mental health, students described the first activity as being related to anxiety. In the online activities of midwifery students, the average percentage was 64.4%, then for nursing students the average percentage was 56.6% and for nutrition students the average percentage was 65.1%. The second activity is related to students' anxiety if they don't bring a cell phone or smartphone, midwifery students have an average percentage of 75.8%, then nursing students have an average percentage of 75.4% and nutrition has an average percentage of 77%. The third activity related to social media can influence the mood of midwifery students with an average percentage of 70.6%, nursing students with an average the

percentage was 70.4% and the average percentage for nutrition students was 72.3%. Activity fourth was the last activity where students found it difficult to sleep after using digital devices connected to the internet, the average percentage for midwifery students was 65.3%, nursing students 62.2% and student average nutrition percentage amounting to 62.6%.

**Social Comparison and Self-Esteem**

**Table 5 recapitulation results of student activities related to social**

Category of Cyberpsychology	Study Program		
	Midwifery (%n=124)	Nursing (%n=124)	Nutrition (%n=124)
Attach original photo without editing	67,7	67,6	68,7
Lerned a lot about life from social media	48,9	80,4	82,8
You can shop for anything throught social media or online applications	74,2	70,2	72,4
Update status on media social as self-existence.	79,8	65,6	70

Source: Processed Recapitulation of Respondent, (2024)

Cyber Psychology on aspects of social comparison and student self-image. In the first activity, students attached their original photos without editing, for midwifery students the average percentage was 67.7%, then for nursing students the average percentage was 67.6% and for nutrition students the average percentage was 68.7%. The second activity, students learn a lot about life from social media, for midwifery students the average percentage is 48.9%, then for nursing students the average percentage was 80.4% and nutrition students reach an average percentage of 82.8%.

The third activity, students can shop for anything via social media or online sales applications, for midwifery students the average percentage reaches 74.2%, then nursing students reach the average percentage as big as 70.2% and the average percentage for nutrition students as big as 72.4%. The fourth activity, students update their status on social media as their existence, showed that midwifery students had an average percentage as big as 79,8%, Then nursing average percentage was 65.6% and

nutrition students reached the average percentage as big as 70%.

**Impact on Social Relationship**

**Table 6 summarizes results of student activities related to social relationships**

Category of Cyberpsychology	Study Programs		
	Midwifery (%n=124)	Nursing (%n=124)	Nutrition (%n=124)
Be yourself in cyberspace	61,8	59,7	60,2
Comfortable communicating online versus offline	65,1	60,6	63,6

Source: Processed Recapitulation of Respondent, (2024)

Cyber Psychology on the aspect of impact on social relations. In the first activity, students describe behaviour they can be themselves in cyberspace, midwifery students have an average percentage of 61.8%, then nursing students had an average percentage of 59.7% and nutrition students had an average percentage of 60.2%. In the second activity, students felt more comfortable when communicating online compared to offline, so midwifery students had an average percentage of 65.1%, then student nursing had an average percentage of 60.6% and nutrition students achieved an average percentage of 63.6%.

**Fear of Missing Out**

**Table 7 summarizes results of student activities related to fear of missing out**

Category of Cyberpsychology	Study Programs		
	Midwifery (%n=124)	Nursing (%n=124)	Nutrition (%n=124)
Fear of missing latest of missing	76,7	74,9	77

Source: Processed Recapitulation of Respondent, (2024)

Cyber Psychology on the aspect of fear of being left behind with information related to the latest trends or issues. Midwifery students had an average percentage of 76.7%, then nursing students had an average percentage of 74.9% and nutrition students had an average percentage of 77%.

**Digital well-being**

**Table 8 summarizes results of student activities related to digital**

Category of Cyberpsychology	Study Programs		
	Midwifery (%n=124)	Nursing (%n=124)	Nutrition (%n=124)
Optimistically, everyone must understand technology	74.3	73.4	78.8
Filter information sources from internet	85.3	82.1	84.1
Find out sources of information that worthy	85.8	82.5	85.3
Ensure digital devices connected to the internet	80.1	74.2	78.2
Passionate about experimenting post access social media or web browser	85.2	85.3	84.9
Relying on AI to carry out a task	79.7	77	77.8

Source: Processed Recapitulation of Respondent, (2024)

Cyber Psychology on the digital well-being aspect where students are optimistic that everyone must understand technology, showing that midwifery students had an average percentage of 74.3%, nursing students own the percentage of 73.4% and nutrition students own the average percentage of 78.8%. In the second description of student activities, filtering information sources originating from the internet, for midwifery students the average percentage was 85.3%, nursing students own the average percentage was 82.1% and nutrition students had an average percentage of 84.1%. The third activity, related to finding out reliable sources of information, showed that midwifery students own the average percentage of 85.8%, nursing students had an average percentage of 82.5% and nutrition students had an average percentage of 85.3%. In the fourth activity related to students ensuring that digital devices are connected to the internet, midwifery students showed that the average percentage was 80.1%, nursing students own the average percentage is 74.2% and nutrition students own the average percentage was 78.2%.

In the fifth activity, students were enthusiastic about carrying out experiments after accessing social media or web browsers. For midwifery students, it showed that the average percentage was 85.2%, for nursing students their average percentage amounted to 85.3% and nutrition students own the average percentage was 84.9%. Then, the last activity was related to student activities in relying on Artificial Intelligence (AI) for doing their coursework, on student midwifery own the average percentage

was 79.7% for nursing students own the average percentage was 77% and student nutrition own average 77.8%.

## DISCUSSION

This research was conducted using perspective cyber psychology, where the activity of life in the universe is currently increasingly unstoppable with the rapid worldwide digital progress, changes that significant What is happening, one of which is artificial intelligence (Artificial Intelligent) which was developed for automation activities, voice recognition, data analysis and social media to become transformative agents for the contemporary world of education ecosystem today (Shahzad et al. 2024) so Artificial intelligence be an indicator in making a decision (Sadeghi R. et al. 2024) However, in line with today's modern technology, there are impacts that must be borne by today's young generation, namely their addiction to technology (Rachayu and Banat 2020) (Alqarni et al. 2024) stress (Qi and Yang 2024) and persistent anxiety (Stanković and Nešić 2022), cyberbullying and online crime (Tabares, Restrepo, and Zapata-Lesmes 2024; Winstone, Jamal, and Mars 2024b) sleep disorders (Stanković and Nešić 2022), socialization and victims of identity fraud (M. Lubis and Handayani 2021), the spread of misinformation and the impact on mental health (Ayyoub et al. 2022; Wang 2024).

Health students' activities in excessive use of digital technology and exposure to negative content that they read and interpret have an impact on their mental health, including anxiety, prolonged stress, restlessness when not carrying a smartphone, uncertain and difficult mood. Sleep. However, apart from that, students were also starting to realize that there were acts of cyberbullying, which they could experience and witness regarding the type of verbal violence on the internet and their activities that compare yourself with

others on social media. A life showed as an ideal self-image with profile photos that were fully edited to produce images that were not actually, thus having an impact on their low level of confidence in reality he had.

## CONCLUSION

There is a big challenge for health students in facing the rapid flow of technology, where the picture is clear cyber psychology that they face, namely the addictive aspect of using more than 7 hours per day, excessive use of social media features, not being confident in their own profile, anxious when not carrying a smartphone, anti-cyberbullying and online fraud, worried about the security of their personal data, lacking optimistic about mastering technology, very dependent on artificial things intelligence (AI) in making lecture assignments, and enthusiastic about learning about life through social media. The use of technology is a soft skill competency that health students must have in order to detect impacts early negative digital impact on students' mental health, so they are required to understand data privacy and ethics digital literacy can influence emotions, behaviour and student happiness.

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