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Digital Health Literacy Competencies of Students in Faculty of Health Science

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ABSTRACT

Background: Students are the most significant internet users in Indonesia. 49.52% of internet user groups in Indonesia are students. High internet users do not guarantee that digital health literacy is also high. Students at the Universitas Dian Nuswantoro health faculty are responsible for disseminating health information and transmitting digital health literacy interests. Health literacy skills are necessary for health students to sort out doubtful information. Good health literacy skills will impact students' ability to assess incoming data and make appropriate health decisions. This study aims to describe the digital health literacy skills possessed by students of the Faculty of Health. Universitas Dian Nuswantoro. **Method**: This descriptive study provides an overview/description of the digital health literacy skills possessed by students of the Faculty of Health, Universitas Dian Nuswantoro. The research population is 1,642 people with the sample being 321 students. Data collection using Google Forms and distributed through class groups in WhatsApp (WA) and communicated privately. The statistical test used descriptive statistical analysis. **Results**: Faculty of Health Science at Universitas Dian Nuswantoro students had an "Advanced" or "Independent-Advanced" level of competence. The advanced level indicates that their digital competencies and health information skills are at their current status and without problems. Indicators that digital health literacy can improve our safety. Thus, students can improve methods for securing personal data. **Conclusion**: Digital health literacy is an ability needed in today's digital era. What needs to be improved is that students can choose the most appropriate method to protect personal data.

Introduction

Students are also an essential element in efforts to overcome the hoax problem. The most active social media users are students [1]. Students as the next generation have characteristics that are always quick to get new information [2]. This generation only focuses on finding information based on desires and tastes. Furthermore, according to Tom Nichols, the factor that causes hoaxes to increase is that everyone has created an echo chamber [3]. Everyone has been trapped in his echo chamber where those with the same understanding are met [3]. Based on the research, 223

respondents, or 58% of the health faculty students studied, found that respondents received hoaxes related to COVID-19 through written and image forms [4]. Of the 15 health faculty students who had spread hoax news related to Covid-19, friends were the most targeted for spreading hoaxes, namely 13 respondents or 87% [5]. Another way that digital literacy competencies can do is to improve digital literacy skills. Digital literacy is the ability of each individual to access it, understand, create, communicate, and evaluate information through digital technology devices [6]. Good digital literacy skills will be able to detect information that is a hoax or not. It is interesting to see health faculty students' digital health literacy skills. Health literacy skills are necessary for health students to sort out doubtful information. Good health literacy skills will have an impact on students' ability to filter incoming data and make appropriate decisions in the health sector [7]. The digital era has produced billions of information daily until this era is identified with the period of information flooding. This information has had an impact on existing data in the health sector. Health information among health faculty students who are doubtful requires digital health literacy efforts. Digital health literacy is a skill, knowledge, and practice related to health and is needed by someone to understand digital-based information [8]. The Digital Health Literacy Instrument (DHLI) can be used in the health sector to assess operational skills. navigation skills. information retrieval, evaluate reliability, determine relevance, add self-generated content. and protect privacy [9]. Due to a lack of digital health literacy, health students are unable to sort through the amount of information received through online media or social media, which leads to incorrect decisions about matters directly or indirectly related to health [10].

Health faculty students are considered to have good knowledge and access to information on health issues [5]. Faculty of Health Science. Universitas Dian Nuswantoro, has had excellent research on health literacy to improve health status. This excellent research has been stated in the health faculty research master plan 2020-2024 [11]. So the author would see the digital health literacy abilities of the students of the Faculty of Health Science, Universitas Dian Nuswantoro.

Materials and Method

In this research. the researcher used the quantitative descriptive method because it provides an overview of health faculty students' digital health literacy skills. The population in this study was 1,642 health faculty students. Calculate the research sample using the Slovin formula with an error tolerance of 5% [12]. The minimum number of samples taken with an error tolerance limit of 5% is 321 students (minimum sample). The sampling technique used is probability sampling. This method gives all population members the same probability or opportunity to become the selected sample [12]. Data collection uses an online questionnaire (Google Forms) distributed through class groups in WhatsApp and conducts personal communication. The questionnaire is a technique for collecting data by giving a set of questions or written statements to respondents to answer [13]. The questionnaire used is a questionnaire that has been tested for validity and has IPR (No IPR. EC00202123192). The questionnaire is an instrument to measure digital health literacy skills for students in the health faculty. The statistical test used is descriptive statistical analysis in percentage analysis techniques (%). average (mean). and median or midpoint. This research has been approved by the Health Research Ethics Commission of Universitas Dian Nuswantoro with the number 293/EA/KEPK-Fkes-UDINUS/VII/2022.

The Health Literacy Index to categorize the ability index of digital health literacy is used using the calculation:

$$Index = (mean - 1) * (\frac{50}{3}) \quad (1)$$

Thus, the calculation method is [14]:

$$Digital\ Health\ Literacy: (((Q1 + Q2 + Q3 + Q4 + Q5 \ldots + Q24/24) - 1) * 50/3) \quad (2)$$

Category Value Index Digital Health Literacy:
0-50 = 'Beginner'
>50 to 70 = 'Independent'
>70 to 90 = 'Advance'
>90-100 = 'Expert'

Results and Discussion

Results

This study measures digital health literacy competence using a modified eHealth questionnaire [14]. The answer describes the respondent's level of digital health literacy ability. Respondents' answer levels were 0: Can not; 1: Very difficult and need help; 2: Difficult and need help; 3: Easy but still need help; 4: Easy without help; 5: Easy to help others; 6: Very easy if without problems; 7: Very easy, can solve if problems arise. Digital health literacy competency measures competence in accessing, managing, integrating, and evaluating health information consisting of eight questions.

Appendix 1 shows that students were unable to choose the most appropriate method to protect personal data (e.g. address, telephone number, etc.) when sharing digital content on social media. as many as seven respondents (2.1%). The highest level of competencies (7 = very easy and can solve the problems) on the communication and collaboration (Digital Competencies) indicator, namely the statement item "I can manage group chats on mobile phones (e.g. Facebook messenger or WhatsApp, Line, Telegram). e.g. creating groups, adding members and deleting groups", as many as 162 respondents, 48.1% (Appendix 1).

Table 1 shows that the students have the highest mean competencies score (=5.65) in health information integration. However, the lowest score was Access to Health Information (=4.89). This study explored how student digital health literacy competencies sorted from the highest to the lowest are managed, access, integrate, and evaluate health information. The calculations of digital health literacy are in Appendix 2. Thus, the Digital Health Literacy Competencies category in the Faculty of Health Science, Universitas Dian Nuswantoro is **Advanced**.

Table 1. Univariate Result Analysis

Statement	Min	Max	Mean	SD
Digital Competencies				
Information and Data Literacy	1	7	5.29	1.422
Communication and Collaboration	1	7	5.526	1.297
Digital Content Creation	1	7	5.09	1.543
Safety	0	7	5.025	1.601
Problem-Solving	1	7	5.054	1.484
Health Information Literacy				
Health Information Access	0	7	4.89	1.507
Health Information Management	0	7	5.105	1.433
Health Information Integration	1	7	5.65	1.272
Health Information Evaluation	2	7	5.265	1.406

Discussion

Digital health literacy is the skill, knowledge, and practice related to health that a person needs to function optimally in digital-based information [15]. Digital health literacy is an ability needed by health faculty students in the era of the industrial revolution 4.0. Health literacy skills are necessary for health students to sort out doubtful information. Good health literacy skills will have an impact on students' ability to filter incoming data and make appropriate decisions in the health sector [7]. The current digital era has produced billions of pieces of information, called the information flood era. This information has had an impact on existing knowledge in the health sector. Health students among health information students who are doubtful require digital health literacy efforts. Digital health literacy is a new face of health literacy in the digital era that has been proven to be related to health status and health behavior [16-18].

To our best knowledge, this paper is the first study that describes the digital health literacy status of students of faculty health science in Indonesia. The case study was conducted on the faculty of health science students. Students of health science majors expectantly have digital health literacy skills in advance. This study reveals that competency in health information access is at the lowest competence among other competencies. 18.4% still need help finding out health information on the internet. This is also reinforced by the findings in Elham's study, which revealed that students thought that medical information available on the internet was inaccurate [19]. Perceptions about the inaccuracy of health information on the Internet will lead to apathy toward health information

available on the Internet. So, they need help to find health information on the Internet. Another finding is the study of to by Lee, Sbaffi, and Zhao, which found that search engines such as Google were seen as an easy source for finding health information by students and were also a principal source of information. In addition, the student also found that students who did not discuss information obtained by doctors/health workers were more likely to seek health information independently than those who discussed it with doctors/health workers. Students who do not discuss their search results on the Internet with doctors may be relying on their skills to research further and find the health information they want. so they need to search more. In addition, most of the male and female students who did not search for health information on the internet felt that they had received sufficient information [20,21].

Another finding in this study is that the health information integration indicator has the highest level of competence compared to other indicators. This implies that students can use the internet to answer health questions and know how to use health information to help with work. Alice's research also shows that 63% of students find it easy to find helpful health information, and 87% of students know how to find health information on the internet [22-24]. With the increasing availability of health information on the internet, the number of people who use this resource to search for health information has also increased [25-27]. Moreover, competencies still found that the inability to recognize valid health information or not was due to the assumption that the health information available on the internet had been checked by another party. namely 161 respondents [28-30].

The limitation of this study is that it only measures students at the Faculty of Health Science. Universitas Dian Nuswantoro. So, further research can be used on health students at other universities.

Conclusion

Digital health literacy is an ability needed in today's digital era. To our best knowledge, this paper is the first study that describes the digital health literacy status of students of faculty health science in Indonesia. What needs to be improved is that students can choose the most appropriate method to protect personal data.

Declaration

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References

1. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, Zheng J. The Psychological Impact of the COVID-19 Epidemic on College Students in China. *Psychiatry Res*. 2020 May;287:112934. doi: 10.1016/j.psychres.2020.112934. Epub 2020 Mar 20. PMID: 32229390; PMCID: PMC7102633.
2. Rahimi-Ardabili H, Magrabi F, Coiera E. Digital Health for Climate Change Mitigation and Response: A Scoping Review. *J Am Med Inform Assoc*. 2022 Nov 14;29(12):2140-2152. doi: 10.1093/jamia/ocac134. PMID: 35960171; PMCID: PMC9667157.
3. Van Asbroeck S, van Boxtel MPJ, Steyaert J, Köhler S, Heger I, de Vugt M, Verhey F, Deckers K. Increasing Knowledge on Dementia Risk Reduction in the General Population: Results of A Public Awareness Campaign. *Prev Med*. 2021 Jun;147:106522. doi: 10.1016/j.ypmed.2021.106522. Epub 2021 Mar 17. PMID: 33744328.
4. Haikal H. Persepsi Masyarakat terhadap Hoax Bidang Kesehatan. *J Manaj Inf dan Adm Kesehat*. 2021;3(2). https://doi.org/10.32585/jmiak.v3i2.836
5. Haikal H, Pramitasari R, Yanuar AMF, Syifaâ N. The Behaviour of Health Faculty Students Responding to Hoaxes Related Covid-19 on Social Media. *Dis Prev Public Heal J*. 2021;15(2):64–70. https://doi.org/10.12928/dpphj.v15i2.3992
6. Law N. Woo D. de la Torre J. Wong G. A Global Framework of Reference on Digital Literacy Skills For Indicator 4.4. 2. *UNESCO Inst Stat*. 2018; https://doi.org/10.2139/ssrn.2781161
7. Nguyen A. Catalan-Matamoros D. Digital Mis/Disinformation and Public Engagment With Health And Science Controversies: Fresh Perspectives from Covid-19. *Media Commun*. 2020;8(2):323–8. https://doi.org/10.17645/mac.v8i2.3352
8. Matthijs Bakker M, Putrik P, Aaby A, Debussche X, Morrissey J, Borge CR. et al. Acting together-WHO National Health Literacy Demonstration Projects (NHLDPs) Address Health Literacy Needs in the European Region. 2019;(7):233–43. https://apps.who.int/iris/handle/10665/327059
9. Conard S. Best practices in digital health literacy. *Int J Cardiol*. 2019 Oct 1;292:277-279. doi: 10.1016/j.ijcard.2019.05.070. Epub 2019 Jun 5. PMID: 31230937.
10. Riiser K, Helseth S, Haraldstad K, Torbjørnsen A, Richardsen KR. Adolescents' Health Literacy. Health Protective Measures. And Health-Related Quality of Life During the Covid-19 Pandemic. *PLoS One*. 2020;15(8):e0238161. Doi: https://doi.org/10.1371/journal.pone.0238161

11. Huybers T, Greene B, Rohr DH. Academic Research Integrity: Exploring Researchers' Perceptions of Responsibilities and Enablers. *Account Res*. 2020 Apr;27(3):146-177. doi: 10.1080/08989621.2020.1732824. Epub 2020 Mar 3. PMID: 32073893.
12. Gautam Y, Altaye M, Xie C, Mersha TB. AdmixPower: Statistical Power and Sample Size Estimation for Mapping Genetic Loci in Admixed Populations. *Genetics*. 2017 Nov;207(3):873-882. doi: 10.1534/genetics.117.300312. Epub 2017 Sep 26. PMID: 28951529; PMCID: PMC5676228.
13. Abramson EL, Paul CR, Petershack J, Serwint J, Fischel JE, Rocha M, Treitz M, McPhillips H, Lockspeiser T, Hicks P, Tewksbury L, Vasquez M, Tancredi DJ, Li ST. Conducting Quantitative Medical Education Research: From Design to Dissemination. *Acad Pediatr.* 2018 Mar;18(2):129-139. doi: 10.1016/j.acap.2017.10.008. Epub 2017 Nov 5. PMID: 29117573.
14. Haikal, H, Rachmani, E, Nugroho, B, Y, S, Iqbal, M, Nirmalasari, D, A, & Isworo S. Development of Digital Health Literacy Instruments for Students of the Faculty of Health Science. Universitas Dian Nuswantoro. *J Sci Res Reports [Internet].* 2022;28(10):51–62. https://doi.org/10.9734/jsrr/2022/v28i1030557
15. Smith B, Magnani JW. New Technologies. New Disparities: The Intersection of Electronic Health and Digital Health Literacy. *Int J Cardiol*. 2019 Oct 1;292:280-282. doi: 10.1016/j.ijcard.2019.05.066. Epub 2019 May 28. PMID: 31171391; PMCID: PMC6660987.
16. Xie Y, An W, Zheng C, Zhao D, Wang H. Multidimensional Health Literacy Profiles and Health-Related Behaviors in the Elderly: A Cross-Sectional Survey. *Int J Nurs Sci*. 2022;9(2):203–10. https://doi.org/10.1016/j.ijnss.2022.02.007
17. Bak CK, Krammer JØ, Dadaczynski K, Orkan O, von Seelen J, Prinds C. et al. Digital Health Literacy and Information-Seeking Behavior Among University College Students During the COVID-19 Pandemic: A Cross-Sectional Study from Denmark. *Int J Environ Res Public Health.* 2022;19(6):3676. https://doi.org/10.3390/ijerph19063676
18. Clifford JS, Lu J, Blondino CT, Do EK, Prom-Wormley EC. The Association Between Health Literacy and Tobacco Use: Results from a Nationally Representative Survey. *J Community Health*. 2022;47(1):63–70. https://doi.org/10.1007/s10900-021-01019-7
19. Aldousari E, Al-Muomen N. Health Information-Seeking Behavior of Students at Kuwait University. *Int Inf Libr Rev*. 2022;53(4):315–32. https://doi.org/10.1080/10572317.2020.1849913
20. Dunn P, Hazzard E. Technology Approaches to Digital Health Literacy. *Int J Cardiol*. 2019 Oct 15;293:294-296. doi: 10.1016/j.ijcard.2019.06.039. Epub 2019 Jun 15. PMID: 31350037.
21. El Benny M, Kabakian-Khasholian T, El-Jardali F, Bardus M. Application of the eHealth Literacy Model in Digital Health Interventions: Scoping Review. *J Med Internet Res*. 2021 Jun 3;23(6):e23473. doi: 10.2196/23473. PMID: 34081023; PMCID: PMC8212628.
22. Noblin A, Gabriel MH, Cortelyou-Ward K, Holmes K. Health Literacy Among Visiting College Students in the US: A Pilot Study. *J Am Coll Heal*. 2022;70(2):589–97. https://doi.org/10.1080/07448481.2020.1758114
23. Chen Y, Y, Li C-M, Liang J-C, Tsai C-C. Health Information Obtained from the Internet and Changes in Medical Decision Making: Questionnaire Development and Cross-Sectional Survey. *J Med Internet Res*. 2018;20(2):e47. https://doi.org/10.2196/jmir.9370
24. Yang K, Hu Y, Qi H. Digital Health Literacy: Bibliometric Analysis. *J Med Internet Res*. 2022 Jul 6;24(7):e35816. doi: 10.2196/35816. PMID: 35793141; PMCID: PMC9301558.
25. Bittlingmayer UH, Dadaczynski K, Sahrai D, van den Broucke S, Okan O. Digitale Gesundheitskompetenz – Konzeptionelle Verortung. Erfassung und Förderung mit Fokus auf Kinder und Jugendliche [Digital health literacy-conceptual contextualization. measurement. and promotion]. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2020 Feb;63(2):176-184. *German.* doi: 10.1007/s00103-019-03087-6. PMID: 31950230.
26. Yoon J, Lee M, Ahn JS, Oh D, Shin SY, Chang YJ, Cho J. Development and Validation of Digital Health Technology Literacy Assessment Questionnaire. *J Med Syst*. 2022 Jan 24;46(2):13. doi: 10.1007/s10916-022-01800-8. PMID: 35072816; PMCID: PMC8784987.
27. van der Vaart R, Drossaert C. Development of the Digital Health Literacy Instrument: Measuring a Broad Spectrum of Health 1.0 and Health 2.0 Skills. *J Med Internet Res*. 2017 Jan 24;19(1):e27. doi: 10.2196/jmir.6709. PMID: 28119275; PMCID: PMC5358017.
28. Wang X, Luan W. Research Progress on Digital Health Literacy of Older Adults: A Scoping Review. *Front Public Health.* 2022 Aug 5;10:906089. doi: 10.3389/fpubh.2022.906089. PMID: 35991040; PMCID: PMC9389004.
29. Oh SS, Kim KA, Kim M, Oh J, Chu SH, Choi J. Measurement of Digital Literacy Among Older Adults: Systematic Review. *J Med Internet Res.* 2021 Feb 3;23(2):e26145. doi: 10.2196/26145.
30. Nutbeam D. From Health Education to Digital Health Literacy - Building on the Past to Shape the Future. *Glob Health Promot*. 2021 Dec;28(4):51-55. doi: 10.1177/17579759211044079. Epub 2021 Oct 31. PMID: 34719292.

Appendix 1. Respondent Digital Health Literacy Competencies

Statement	0	1	2	3	4	5	6	7
Information and Data Literacy								
I can identify the keywords and tags needed to find information on the internet related to the desired topic.	0 (0)	3 (9)	3 (9)	34 (10.1)	69 (20.5)	58 (17.2)	84 (24.9)	86 (25.5)
Communication and Collaboration								
I can use commonly used chat applications (e.g.. Facebook. WhatsApp. Line. etc.) to "chat" in everyday life	0 (0)	0 (0)	1 (3)	18 (5.3)	70 (20.8)	42 (12.5)	80 (23.7)	126 (37.4)
I can manage group chats on my mobile phone (e.g.. Facebook messenger or WhatsApp. Line. Telegram). for example. creating groups. adding members. and deleting groups.	0 (0)	0 (0)	0 (0)	2 (1.2)	34 (10.1)	50 (14.8)	87 (25.8)	162 (48.1)
I can use commonly used chat applications (e.g.. Facebook. WhatsApp. Line. etc.) to share material (messages. files. pictures. links) with other members of the group	0 (0)	0 (0)	1 (0.3)	4 (1.2)	50 (14.8)	47 (13.9)	81 (24)	154 (45.7)
I can use and suggest various strategic media (FB. hashtags on Instagram. and Twitter) to be used to mobilize community participation in the environment on multiple activities or topics	0 (0)	1 (0.3)	0 (0)	7 (2.1)	75 (22)	64 (19)	67 (19.9)	124 (36.8)
I can manage and solve problems that arise when writing and communicating using digital tools (e.g.. inappropriate comments. hoaxes. etc.) on my social media.	0 (0)	1 (0.3)	2 (0.6)	43 (12.8)	81 (24)	67 (19.9)	81 (24)	62 (18.4)
I can manage my social media to avoid actions that can harm the reputation of my digital data when using social media on the internet.	0 (0)	2 (0.6)	14 (4.2)	32 (9.5)	76 (22.6)	50 (14.8)	88 (26.1)	75 (22.3)
Digital Content Creation								
I know how to add dialogue and images to existing short videos on the internet to generate new videos.	0 (0)	3 (0.9)	10 (3)	36 (10.7)	100 (29.7)	31 (9.2)	69 (20.5)	88 (26.1)
Safety								
I can protect social media accounts (Twitter. FB. Instagram) using various means (good passwords. login controls. etc.)	0 (0)	4 (1.2)	9 (1.2)	47 (13.9(	75 (22.3)	0 (0)	0 (0)	0 (0)
I can detect risks when receiving tweets or messages from others with fake profiles or phishing attempts.	0(0)	3(0.9)	2(0.6)	53(15.7)	83(24.6)	29(8.6)	75(22.3)	92(27.3)
When sharing digital content on social media. I can choose the most appropriate method to protect my data and that of others (e.g.. address. phone number. etc.).	7(2.1)	5(1.5)	26(7.7)	62(18.4)	70(20.8)	44(13.1)	75(22.3)	48(14.2)
I can create digital health campaigns using social media (e.g.. Twitter. FB) that others can share and use on smartphones or tablets.	1(0.3)	4(1.2)	10(3)	30(8.9)	73(21.7)	42(12.5)	82(24.3)	95(28.2)

Statement	0	1	2	3	4	5	6	7
Problem Solving								
I can identify simple problems when using digital equipment and what help is needed to solve these problems.	0(0)	4(1.2)	1(0.3)	24(7.1)	103(30.6)	41(12.2)	64(19)	100(29.7)
I can make adjustments on my computer/smartphone/tablet, such as making the letters bigger so that reader can read them on the screen	0(0)	3(0.9)	11(3.3)	71(21.1)	86(25.5)	44(13.1)	71(21.1)	51(15.1)
I can choose the technology, digital tools and can use them to create well-defined knowledge and innovation.	0(0)	2(0.6)	6(1.8)	64(19)	58(17.2)	59(17.5)	61(18.1)	87(25.8)
I can collaborate with friends to understand and solve routine and conceptual problems using digital equipment.	0(0)	2(0.6)	2(0.6)	25(7.4)	101(30)	48(14.2)	56(16.6)	103(30.6)
I can evaluate whether the situation of the newly discovered digital environment while browsing is appropriate.	0(0)	6(1.8)	0(0)	58(17.2)	98(29.1)	41(12.2)	61(18.1)	73(21.7)
Health Information Access								
I know what health information is available on the internet	1(0.3)	0(0)	10(3)	62(18.4)	78(23.1)	49(14.5)	74(22)	63(18.7)
Health Information Management								
The Internet can be used as a source of health information.	1(0.3)	1(0.3)	14(4.2)	52(15.4)	72(21.4)	49(14.5)	90(26.7)	58(17.2)
I know how to find helpful health information on the internet.	0(0)	0(0)	2(0.6)	27(8)	94(27.9)	57(16.9)	69(20.5)	88(26.1)
Health Information Integration								
I know how to use the internet to answer health questions	0(0)	0(0)	0(0)	15(4.5)	56(16.6)	54(16)	88(26.1)	124(36.8)
I know how to use the health information found to help with work.	0(0)	1(0.3)	1(0.3)	19(5.6)	68(20.2)	52(15.4)	91(27)	105(31.2)
Health Information Evaluation								
I can evaluate health information found on the internet.	0(0)	0(0)	4(1.2)	33(9.8)	66(19.6)	55(16.3)	94(27.9)	85(25.2)
I can distinguish correct health information and incorrect health information on the internet.	0(0)	0(0)	7(2.1)	42(12.5)	77(22.8)	54(16)	74(22)	83(24.6)

Note: 0: Can Not1; 1: Very difficult and need help; 2: Difficult and need help; 3: Easy but still need help; 4: Easy without help; 5: Easy to help others; 6: Very easy if without problems; 7: Very easy. can solve if problems arise.

Appendix 2, The calculation of digital health literacy

$$DHL = \left(\left(\frac{5.29 + 5.66 + 6.09 + 5.97 + 5.66 + 5.08 + 5.14 + 5.09 + 5.15 + 4.54 + 5.26 + 5.28 + 4.70 + 5.07 + 5.29 + 4.93 + 4.89 + 4.94 + 5.27 + 5.74 + 5.56 + 5.36 + 5.17}{24}\right) - 1\right) x \frac{50}{3}$$

$$DHL = (5{,}261 - 1) x \frac{50}{3}$$

$$DHL = 4{,}261 x \frac{50}{3}$$

$$DHL = 4{,}261 x 16.66$$

$$DHL = 71$$

Note: DHL= Digital Health Literacy