STUDIES IN HEALTH TECHNOLOGY AND INFORMATICS 284

Nurses and Midwives in the Digital Age

Selected Papers, Posters and Panels from the 15th International Congress in Nursing Informatics

Editors: Michelle Honey
Charlene Ronquillo
Ting-Ting Lee
Lucy Westbrooke

IOS Press

Nurses and midwives must increasingly work in multi-disciplinary teams and engage with patients to navigate the data and information central to today's digitally-driven healthcare system.

This book presents the proceedings of NI 2021, the 15th International Congress in Nursing Informatics. Originally planned to be held in 2020, the international year of the nurse and midwife, but postponed due to the SARS-CoV-2 pandemic, the conference, with the theme of nursing and midwifery in the digital age, was eventually held as a virtual event from 23 August to 2 September 2021, and the organizers made the decision to take advantage of its virtual nature and extend it to 9 days, with each day focusing on a different theme. This is reflected in the organization of the book, and the 212 papers included here, of which 67 are full papers with the remainder being workshop, panel, case study, and poster abstracts, are grouped into 9 sections. The papers were selected from a total of 437 submissions from more than 40 countries and cover: data analytics and the use of nursing data; digital health nursing workforce development; health policy, service delivery and ethics; informatics in clinical care; innovation and entrepreneurship in nursing; integrated and connected care; nursing information systems; patient participation and citizen involvement; and systems implementation and digital workplaces.

Highlighting developments in nursing and midwifery and the way in which nurses and midwives are embracing the digital age, the book will be of interest to all those involved in healthcare today.

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NURSES AND MIDWIVES IN THE DIGITAL AGE

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Message from the Scientific Program Committee

On behalf of the Scientific Program Committee, I extend a warm welcome to the IMIA-NI members, students, practitioners, informatics researchers, industry partners, and others interested in health and nursing informatics who are attending the NI 2021, 15th International Congress on Nursing Informatics.

NI 2021has been a long time in the planning. Originally planned to be held in 2020, the international year of the nurse and midwife, the conference with the theme of Nursing and Midwifery in the Digital Age aims to showcase achievements of nurses and midwives in the area of digital health. Unfortunately, as with many other aspects of our lives, the advent of the SARS-CoV-2 pandemic resulted in the postponement of the NI 2020 conference. But we are now in the position to bring you NI 2021.

The mission of the Scientific Program Committee is to solicit for, evaluate and schedule NI 2021 conference program to be consistent with the goal of the IMIA-NI. The conference delay enabled us to hold two calls for submissions and because of the virtual nature of the conference we have been able to extend the conference to occur over nine days. Each day has a different theme including: Data analytics and the use of nursing data; System implementations and digital workplaces; Nursing information systems; Innovation and AI in nursing; Evidence based practice; Digital health nursing workforce development; International updates; Health policy, service delivery and ethics; and Patient participation and citizen involvement.

We received 437 submissions for papers, posters, case studies, panels, and workshops from more than 40 countries. Each submission was reviewed by three reviewers selected from a panel of experts. Reviewers' feedback was provided to the authors and every effort was made to ensure the best submissions given the constraints of the conference timetable. In the end, a total of 212 submissions were selected for inclusion. The result of the Scientific Program Committee's activity is reflected in the Conference Program and Proceedings. The proceedings contain 67 full papers, indexed in MEDLINE, and also workshop, panel, case study, and poster abstracts.

The Scientific Program Committee has prepared a wonderful program. We have 13 keynote speakers addressing the state-of-the-art for health and nursing informatics ranging from data, through healthcare delivery and policy, culminating in patient and citizen involvement in digital health. There are 198 pre-recorded paper, case study, and poster presentations, 8 panel discussions, 6 workshops, 1 fireside chat, available to attend. All content will be available online through the Global Showcase is a collection of papers, case study abstracts and posters curated into 10 channels that you can watch anytime.

I hope that all participants have the opportunity to learn from and network with others through keynotes, paper sessions, poster sessions, panel discussions, case study presentations and workshops and find new and exciting ideas to inspire them.

I am very grateful to the contributors for their contributions and the reviewers for providing expert reviews. I am especially grateful to the Scientific Program Committee, for their leadership and strong support, and to the AIDH Conference Team.

Elizabeth Cummings, PhD, RN, RM, FAIDH, Co-Chair Scientific Program Committee, Adjunct Associate Professor, School of Nursing, University of Tasmania, Australia; Adjunct Associate Professor, School of Health Information Science, University of Victoria, Victoria, British Columbia, Canada

Message from the Editorial Committee

Welcome to the 15th International Congress in Nursing Informatics (NI2021). The theme of the congress is "Nurses and midwives in the digital age" and these proceedings represent how nurses and midwives are embracing the digital age and using all the tools available to support and enhance the health of our citizens, communities and our world. These submissions to the congress show the diverse range and high quality of the work undertaken around the world.

2020 was the Year of the Nurse and Midwife and marked the 200th anniversary of the birth of Florence Nightingale, one of the founders of modern nursing. It also marked the COVID-19 pandemic and a huge shift in how we live and work. We are delighted that NI2020 is now coming to fruition as NI2021 and a virtual event. That we have been able to incorporate some new submissions only strengthens the programme of the congress.

There is now strong recognition that investment in nursing leads to improvements in healthcare systems and delivery of care, thereby improving the lives of all. The use of information and communication technologies supports the work of nursing – in clinical and community settings and in nursing education, research, administration and management. We take this opportunity to acknowledge the tremendous dedication and commitment of our nursing colleagues and this occasion to highlight developments in nursing and midwifery as we share advancements of nursing in the digital age.

The Scientific Programme Committee has selected a range of papers, case studies, panels, workshops and posters to showcase. These submissions have been peer reviewed by the Scientific Programme Committee, the Editorial Committee and international reviewers who are experts in their fields. We thank all these people for the great work that they have done selecting such interesting submissions for this virtual congress.

The digital age has made the job of the Scientific Programme Committee and the Editorial Committee much easier and we forget that it was only twenty years ago we really started to use these technologies for our congress planning. We have moved from hardcopy only proceedings to digital proceedings on CD ROM or data sticks to digital online proceedings. We trust these proceedings provide a useful reference as we learn from fellow nurses from around the world.

Michelle Honey on behalf of the Editorial Committee
Michelle LL Honey RN, PhD, FCNA (NZ), FHiNZ
School of Nursing
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Indonesian Student Nurses' E-Health Literacy Skills

Dame Elysabeth TARIHORAN[a,1], Dian ANGGRAINI[a], Enni JULIANI[b], Ressa RESSA[b] and Ihlus FARDAN[c]
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Abstract. Background: Nurses should have a good level of e-health literacy to help patients utilize e-health information. **Objective:** To measure e-health literacy skills and contribute factors. **Methods:** A cross-sectional study of 2209 nursing student in Indonesia (October- November 2019) using eHeals. **Result:** The overall eHealth literacy was 4 (Scale 1- 5). There were statistically significant differences between e-Heals score with contribute factors (<0.001). **Conclusion:** Indonesian nursing students already have basic necessary skills of e-health.

Keywords. e-health, Indonesia, literacy, student nurse

1. Introduction

Indonesia is the world's 4th most populous country, with more than 260 million people, and half of the country's population (57%) consists of internet users [1]. The use of electronic resources in health care is increasing. Nurses should have the skills to help their patients utilize e-health information and correct any misunderstood information resulting from misinterpretation of information gathered from the internet [2].

Presently, there is no sufficient information about the e-health literacy skills of student nurses. This makes it challenging to map the e-health literacy skills among student nurses to predict their readiness to use e-health as part of their nursing service. Therefore, there is an urgent need to identify the Indonesian student nurses e-health literacy skills and the factors that contribute to the e-health literacy of nursing students all around Indonesia.

2. Methods

A cross-sectional study was conducted among 2209 student nurses from 73 schools of nursing in Indonesia (response rate 34%). Surveys were administered online from October to November 2019. Eight-items eHealth Literacy Scale (e-Heals) [3] was used to assess combined knowledge and perceived skills to examine, evaluate, and apply health information from the internet.

[1] Corresponding Author, Dame Elysabeth Tarihoran; E-mail: elysabeth.tarihoran@ukrida.ac.id.

3. Result

The overall median score for eHealth literacy was 4, ranging from 1-5 which indicated that nursing students in this study had a good perceived level of eHealth literacy (Table 1). While 67.63% of students perceived that they had good internet skills, 51.96 % found the internet useful in helping them make decisions about their health. The findings also indicated that there were statistically significant differences between e-Heals score with self-perception of internet skills (p<0.001), the importance of internet (p<0.001), the usefulness of the internet (p<0.001) and the frequency of internet use for other purposes (p<0.001) (Table 2).

Table 1. Self-reported eHealth Literacy Scale (eHEALS).

eHeals statement	Responden, n(%)					Median
	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	
I know what health resources are available on the internet	213 (9.64)	1591 (72.02)	361 (16.34)	40 (1.81)	4 (0.18)	4
I know where to find helpful health resources on the internet	377 (17.07)	1619 (73.29)	196 (8.87)	13 (0.59)	4 (0.18)	4
I know how to find helpful health resources on the internet	354 (16.03)	1669 (75.55)	171 (7.74)	10 (0.45)	5 (0.23)	4
I know how to use the health information I find on the internet to help me	465 (21.05)	1632 (73.88)	102 (4.62)	7 (0.32)	3 (0.14)	4
I know how to use the internet to answer my questions about health	471 (21.32)	1593 (72.11)	132 (5.98)	11 (0.50)	2 (0.09)	4
I have the skills I need to evaluate the health resources I find on the internet	203 (9.19)	1458 (66.00)	507 (22.95)	35 (1.58)	6 (0.27)	4
I can tell high-quality health resources from low-quality resources on the internet	326 (14.76)	1562 (70.71)	283 (12.81)	35 (1.58)	3 (0.14)	4
I feel confident in using information from the internet to make health decisions	230 (10.41)	1567 (70.94)	363 (16.43)	43 (1.95)	6 (0.27)	4

Table 2. Factors associated with eHealth Literacy Scale (eHEALS).

Characteristics	Number, n	%	Statistics (Kruskal-Wallis H)	EHEALS significance	Mean rank
Frequency of using internet for health-related purpose					
More than 3 times a day	601	27,21	**0.000**	**0.000**	1237,06
Alternated days	1014	45,9			1081,21
Once a week	237	10,73			1083,23
Sometimes in a month	357	16,16			964,7
Perceived importance of internet					
Very important	1157	52,38	**0.000**	**0.000**	1300,61
Important	978	44,27			900,35
Unsure	40	1,811			356,49
Not important	4	0,181			953,25
Not important at all	30	1,358			1251
Perceived usefulness of internet					
Very useful	1148	51,97	**0.000**	**0.000**	1283,17
Useful	1024	46,36			925,01
Unsure	27	1,222			379,35
Not useful	8	0,362			1027,81
Not useful at all	2	0,091			1097,5
Perceived level of Internet skills					
Very good	552	24,99	**0.000**	**0.000**	1414,87
Good	1494	67,63			1013,11
Average	157	7,107			885,21
Poor	6	0,272			1228,92

4. Conclusions

This study demonstrates a baseline reference for e-health literacy among nursing students in Indonesia. Indonesian nursing students already have the necessary basic skills of e-health. This finding is consistent with a study among nursing students in Jordan (2016), Iran (2017) and Nepal (2019) [2]. However, additional skills are needed by introducing and scaffold health sciences students' learning experience on health information and communication technology to prepare them for their future workplace [4].

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Indonesian student nurses' e-health literacy skills

Global Showcase: Poster Presentations

8:00am - 3:00pm

Dame Elysabeth Tuty Tarihoran
Lecturer
Krida Wacana Christian University

This session ends in 2h 30m

End Presentation for All

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Nursing information systems

Dame Elysabeth Tuty Tarihoran

My name is Dame Elysabeth from Indonesia, I am a nursing faculty in one of private university in Jakarta, Indonesia. I started my career in nursing for 17 years ago. I have been working in the hospital for my first 5 years of career as a nurse and 12 years in nursing education.
My research interest is innovations in stroke care, palliative care, and nursing ed

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